

# GENERAL CATALOG

## 2012/2013



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# CALIFORNIA NATIONAL UNIVERSITY'S

## Board of Governors

**Janice Bryant-Howroyd**, *Chairman of the Board*  
*Business Owner, Industry Leader, Community Activist*

**Bernard Howroyd**, *Board Member*  
*Industrialist, Financier, Philanthropist*

**Michael Hoyal**, *Secretary*  
*Chief Financial Officer, Foundation Director*

**Patricia Bryant**, *Board Member*  
*Corporate Director*



## **About California National University**



California National University was founded in January 1993 in recognition of the need for working adults to meet contemporary challenges to re-think and re-tool. From the beginning it has been CNU's intent to provide quality degree programs in a flexible environment. This goal has been accomplished by adopting an innovative approach to traditional education; combining self-study with direct personal contact and technology. A unique aspect to CNU programs is the one-on-one instruction students receive from a distinguished national faculty. Although the University has taken advantage of advancements in technology to improve instruction, technology is regarded as an enhancement rather than a replacement for good teaching and relevant content. Students enjoy an educational climate that is typical of one found on a small traditional campus. This is made possible at a distance through a centralized Learning Network; emphasizing committed student service and open communication. CNU offers programs which afford a rich opportunity for U.S. and Non U.S. residents to match their desire to develop intellectually and professionally.

## **Consumer Information Disclosure**

### **General Information**

**Name of Institution:**

**California National University for Advanced Studies**

**Address:** 8550 Balboa Blvd. Suite 210, Northridge, CA 91325

**Year Founded:** 1993

**First Accredited:** 1998

**President:** Mr. Carlton G. Bryant

**Vice President of Student Affairs/Registrar:** Ms. Stephanie M. Smith

**Accreditation and Agency E-mail Contact Information:**

Distance Education and Training Council (DETC). <http://www.detc.org/contactUs.html>

**Approval and E-mail Contact Information:** The California National University for Advanced Studies is a private institution, approved for operation by the California Bureau for Private Postsecondary Education in accordance with the provisions of California Education Code Section 94310. <http://www.bppe.ca.gov/>

Any questions that the student may have regarding this catalog that have not been satisfactorily answered by the institution may be directed to the Bureau for Private Postsecondary Education at 2535 Capitol Oaks Drive, Suite 400, Sacramento, CA 95833; by toll free telephone number (888) 370-7589 or by fax (916) 263-1897.

**Participation in Funding Programs:** G.I. Bill, DANES, VEAP

## **Accreditation and Approvals**

California National University for Advanced Studies is nationally accredited by the Accrediting Commission of the Distance Education and Training Council (DETC)  
1601 18th Street, N.W. 20009. Phone: (202) 234-5100. Washington D.C.

The Accrediting Commission of the DETC is listed by the U.S. Department of Education as a nationally recognized accrediting agency and as a recognized member of the Council of Higher Education Accreditation (CHEA).

California National University for Advanced Studies is listed in the American Council on Education Directory and in the Higher Education Directory

California National University for Advanced Studies is listed in the Carnegie Classification for degree-granting institutions accredited by an agency recognized by the U.S. Secretary of Education.

### **G.I. Bill and VEAP**

California National University for Advanced Studies is approved to participate in the voluntary education tuition assistance program administered by the Defense Activity on Non-Traditional Education Support (DANTES). Active duty military personnel and reservists should contact their education office for more information.

**All CNU programs are approved by the Veterans Administration under the G.I. Bill and VEAP. If you are eligible and wish to receive tuition assistance under one of these programs, contact your local VA office or education office to receive an eligibility certificate.**

## **A Personal Message from the Chairman of the Board**

For some time now we have been confronted with the dilemma of two Americas; the educated and the un-educated; and the reality that those with the higher level of skills receive the greater economic awards.

The more I realized how this predicament can permeate all of our lives, the more I became determined to channel the necessary resources toward the creation of an innovative educational program which addressed the academic needs of an adult student and recognized their earlier accomplishments inside and outside the classroom.

Obviously, education in the traditional setting is not always going to be a viable solution for adults dealing with the demands of work, frequent travel, and family. On the other hand, we at California National University are completely committed to academic excellence and the educational welfare of our students. As you learn about CNU's distance education, you will quickly see how the administration and academic staff successfully meet this challenge.

I take enormous pride in our high academic standards, eminent faculty, and the fact we can present, through our university, an equal opportunity to all seeking continued education:

- those who are experiencing transitions in their careers,
- those who, for whatever reason, did not matriculate or graduate,
- those who need to adapt academic studies to work responsibilities,
- those who travel frequently thereby disrupting mandatory classroom attendance, and
- those who are physically challenged or who face health restrictions.

Finally, as a working professional myself, I have personally experienced many of the frustrations seeking opportunities to pursue my education. Those of us in business and industry know only too well the importance of continued learning. Paul Allaire, Chairman, CEO, Xerox Corporation makes a statement very representative of the times:

*America must have world-class education and training programs if we are to compete successfully in the  
21st century.*

We at California National University look forward to working with you to accomplish these necessary goals to ensure your prosperous future.

Sincerely,

Janice Bryant Howroyd  
*Business Owner, Industry Leader  
Community Activist*

## **Welcome from the President**

Welcome to CNU! At CNU, we believe that every day is the right day to begin pursuing your goals. Our Faculty and Staff are as committed to your success as you are.

With rigorous academic programs focused on relevance and real world application, CNU can help students keep abreast of emerging trends and technical advancement—so students can gain the knowledge and skills needed to successfully enter and keep current in today’s competitive marketplace.

CNU students are just like you. Some are beginning a Bachelor’s program while others are finishing a degree interrupted years ago. Some are pursuing a Master’s degree to augment years of industry experience, while others are enrolling in a course or Certificate Program to take advantage of time at home while raising children. From corporate professionals to military service members, from small business owners to civilian employees and stay-at-home parents, CNU students share this in common: like you, they are motivated adults committed to their personal and professional growth through accredited online education--done their way. CNU’s unique combination of one-on-one instruction from a distinguished national faculty and a self-paced online format delivers the flexibility and support students need to succeed. The convenience of online delivery means students can fit study time into a busy lifestyle. One-on-one interaction with professors gives the student confidence of knowing the learning process is guided by experts in the field.

I encourage you to browse CNU’s website [www.cnuas.edu](http://www.cnuas.edu) and find out more about us.

Carlton G. Bryant

*President*

*CNUAS*

## **Welcome from the Vice President of Student Affairs/Registrar**

It is my pleasure as the Vice-President of Student Affairs to welcome all students to the California National University for Advanced Studies to experience our on-line education that combines e-learning with one-on-one instruction. Here students thrive on a flexible educational process that focuses on individual development as well as career advancement.

Based on high standards, CNU provides a full range of academic and professional degree programs. Students realize many benefits from our innovative method of instruction which combines technology and one-on-one interaction with members of our esteemed faculty. Although students never attend class, they have direct contact in each of their courses with a professor holding impressive credentials in their designated field of study.

To assure each student is provided thorough preparation in meeting their individual objectives, the California National University faculty engages in an on-going curriculum review, and if needed, revision. This continuous evaluation enables CNU to prepare students for success in the 21<sup>st</sup> century by offering comprehensive programs in the Colleges of Business Administration, Engineering and Quality Assurance. Professional and economic pressures demand we keep on learning so we can be successful. Education can no longer be regarded as a luxury. It is a necessity.

Community organizer, Lawyer, Constitutional Law Professor, Author, President of the United States, *Barack Obama* wrote, "Making your mark on the world is hard. If it were easy, everybody would do it. But it's not. It takes patience, it takes commitment, and it comes with plenty of failure along the way. The real test is not whether you avoid this failure, because you won't. It's whether you let it harden or shame you into inaction, or whether you learn from it; whether you choose to persevere..." Students enrolled in CNU are empowered to meet this difficult challenge and to maximize their potential through the relevant, dynamic educational programs found at our institution. Congratulations on making a wise investment in your future. You are adding valuable learning to your personal growth.

Stephanie M. Smith

*Vice President of Student Affairs/Registrar*

## ***Welcome from the Consultant to Vice President of Student Affairs/Registrar***

CNU's unique educational approach consists of a flexible process that focuses on individual development and career advancement. A great deal of personal mentoring guidance from an experienced instructor provides a new and innovative delivery approach. Each curriculum, course assignments, and communication are individually designed, graded, addressed, and customized to a student's needs. The process of learning and working toward a Business Degree, while acquiring hands on experience in a full-time job related to the field of study, provides the ideal combination for personal growth in business acumen of any individual. With the support of information technology, business students will look to CNU's approach as the education experience of choice. Our business graduates and students speak loudly and proudly in their testimonies to the quality of education they experience. Business students make the commitment, take the initiative, and follow through, one assignment, one course, one grade at a time, and over a cumulative period of time, realize the dream of their chosen degree. With such training in dedication and discipline, this program produces not just ordinary graduates, but strong business leaders and entrepreneurs of tomorrow.

Philip Chong, Ph.D.

*Consultant to Vice President of Student Affairs/Registrar*

## **Welcome from MIS Director**

“The experienced MIS team provides the systems and technologies to enable CNU students and faculty to work within their individual schedules to communicate through e-mail; enter web site classroom conference areas; or interconnect with libraries and electronic reference resources. The MIS team continually researches new technologies to ensure a flexible and responsive distance learning environment.”

Charles Ng  
MIS Director

## **Welcome from the Associate Dean**

For variety of reasons, many bright people interested in technology do not attend or complete college immediately after finishing high school. Often, at some point in their careers, they realize that the lack of a college degree is impeding their desire for advancement. However, with the added responsibilities of job and family, they find it difficult to attend a traditional university due to the regimented schedule and travel requirements.

The technical programs at California National University are ideally suited for this type of person. We offer degrees in engineering, computer science, and quality assurance science. Our curriculum is commensurate with offerings from traditional universities, but at CNU you determine the schedule that works with your life. We believe in the use of technology for delivering distance education, but we also believe in student-faculty interaction. Most importantly, we provide a unique opportunity for advanced technical education for the working professional.

Robert Ryan, Ph.D.  
*Associate Dean, CNU College of Engineering*

## **Welcome from the Director of Instruction**

I am very excited to be Director of Instruction for California National University! As Director of Instruction, my job is to work with the faculty to maintain the high quality of our courses by keeping them both relevant and current. As CNU students, you deserve the best!

Books and materials, including software, are the responsibility of the student. Their cost will vary according to the course requirements; with the average cost per course being \$150.00, not including shipping and handling costs. Shipping and handling costs are the responsibility of the student and will vary according to weight of package and/or the student's geographical location.

CNU's online bookstore is a convenient resource for purchasing your course textbooks and software packages. Students must own or have access to a computer and have internet access for the course offerings at CNU.

Carol Backer, Ph.D.  
*Director of Instruction*

## **CALIFORNIA NATIONAL UNIVERSITY'S MISSION & INSTITUTIONAL GOALS**

California National University for Advanced Studies aims to address the needs of today's and future Business and Technical Professionals by providing higher education through distance learning. California National University is committed to academic excellence and to the educational welfare of each of its students. We are a student-centered institution divided into three colleges that offer a variety of advanced studies through distance education. CNU offers undergraduate and graduate degree programs, a certificate program; and individual courses through extension. The intent of CNU's educational programs and nationally recognized faculty is to develop, among varying constituencies of working adults, those skills and competencies which will promote their personal and professional growth.

### **Institutional Goals**

- Students will benefit from customized degree programs, which are operable within a conformable time frame.  
Provide the student with one-on-one instruction from a distinguished Faculty with nationally recognized credentials in the fields of Business Administration and Engineering.
- Provide technology that supports and preserves the academic program and increases the effectiveness of the educational services.
- Provide administrative support that reinforces and preserves academic and financial resources necessary to enable students to meet their educational objectives and professional goals.
- Meet an increasing demand on international levels for further education in Business Administration and Engineering.
- Meet an increasing demand on Corporate and Military levels for further education in Business Administration and Engineering.
- Develop and maintain an effective ethical program of resource development that supports the mission of California National University for Advanced Studies.
- Provide exemplary admissions, course enrollment, and Student record-keeping services, and demonstrate a commitment to helping Students and Faculty in a friendly and timely manner.

## 7 REASONS TO JOIN

### **High Academic Standards Delivered through Distance Learning**

California National University for Advanced Studies (CNU) extends the traditional university setting via its unique distance learning program. While the CNU program is flexible and individualized, you are still guaranteed the academic quality found in traditional settings. At CNU, you benefit from the adaptability of our educational program without having to compromise academic standards or resources.

### **One-on-One Instruction from Nationally Recognized Faculty**

California National University presents educational programs which are not limited to indirect instruction. An integral part of the CNU learning process is the interaction between you and the faculty. Although you never have to attend classes, our innovative method of instruction guarantees you regular contact with an esteemed faculty gathered from across the nation with impressive credentials in Engineering and Business Administration. Every course has been planned so you are guaranteed personalized feedback from each of your instructors about your academic progress. Plus, school administration is always available to provide personal assistance and to facilitate your progress through the course.

### **Depth and Breadth of Education**

CNU degree programs are individualized to accommodate the most current educational focus as well as your lifestyle needs. You benefit immediately by applying updated theories and practices to your personal or work situation. The CNU curriculum has been designed by a prestigious academic staff and presents a comprehensive offering of classes from the basic to those dealing with leading-edge issues. We promote the achievement of your educational and career goals through our ability to provide national access to higher education.

### **A Student-Centered Institution Concerned with Your Educational Welfare**

California National University for Advanced Studies values you as a student and is committed to your educational welfare. Our advising process begins from the moment you apply and continues throughout your educational program. You will find our faculty and administrative staff always there for your support. Our resources are being continually expanded to serve you better. CNU students benefit from a model Student Services Program and ever-increasing online capabilities. Through our web page, students can enter the CNU conference rooms to chat and network with professors and each other about school and mutual interests. Your satisfaction and the ability to translate benefits gained from your CNU experience into your life are of primary importance to all of us at California National University.

### **Recognition for Prior Learning**

California National University for Advanced Studies presents the opportunity to match your desire for continued education with your own background. Our comprehensive program is designed to take into consideration your special needs. We recognize your former accomplishments as contributions to your continued education. CNU administrative staff and faculty carefully evaluate individual applicant's knowledge gained through learning and experience. California National University encourages your academic success and broadens your self-confidence by building on your prior learning.

### **Flexible Learning Anytime, Anywhere!**

Rapid advances in communications technology have removed the geographical barriers for continued education. You are encouraged to take advantage of the options CNU offers for increased access and for making your learning schedule flexible to your needs. You choose your own learning environment; eliminating penalties caused by common constraints such as schedules, residency restrictions, family or disabilities.

### **Affordable Education for Today's Adult**

Life-long education is a necessity and not a luxury. This fact is increasingly more evident as we enter the 21st century with its emerging technology and global economy. CNU addresses these trends by using advances in technology to increase access and to decrease expense; so, you may pursue your educational objectives cost effectively. As an adult in today's society, you need a learning experience which prepares you to contend with modern challenges. Current demand is for a learning environment in line with our fast-paced, changing world; and, yet able to accommodate a busy life-style.

# Application & Admissions

## Deadlines

Classes start every Friday. The admissions process usually takes two to three weeks. Students can enroll as “Registered” while they submit transcripts, resumes, essays and any other admissions requirements. All applicants can apply electronically for admission at “apply now link.” The Online Application will guide applicants through the admissions process, but an admissions advisor is available by phone or email 8am – 5pm PST. An applicant can also request an application mail, email or fax. Applicants who would like their previous schools transcripts considered must request them. Unofficial transcripts are acceptable during the evaluation process, but official transcripts will be required.

Admission Requirements: The admissions portfolio consists of:

1. Your **online application** form submitted with the \$75 non-refundable application fee. Please visit [www.cnuas.edu](http://www.cnuas.edu) and click the "APPLY NOW" title bar in the upper left-hand corner to access the online application.
2. **The essay** (included in the online application), 3-4 paragraphs describing your career objectives and how you see a degree supporting them, and your readiness for an online degree program.
3. **Your professional resume**
4. **Official transcripts** from any institution where you earned college credit and/or military service transcripts that you would like to be evaluated for transfer credit eligibility.  
*A note: unofficial copies of transcripts may be used for the Degree Program Evaluation until the officials arrive. The unofficials will need to show the course title, the amount of credit per course, the credit unit of measure (in semester or quarter hours), the grade, the name and address of the institution. Please email or fax unofficial transcripts to (F) 818-830-2418 / [cnuadmin@mail.cnuas.edu](mailto:cnuadmin@mail.cnuas.edu) .*
5. **Optional items** include professional certificates or diplomas, a manager's recommendation/reference letter or performance evaluation.

The objective with the portfolio is to create for the Admissions Committee a well-rounded picture of yourself as a working professional and prospective online learning student. When your admissions portfolio is complete, The Admissions Advisor submits the information to the Admissions Committee. The faculty deans will review your transcripts and award any transfer credit. Based on your personalized Degree Program Evaluation, they will make an acceptance determination and outline your program, tailored for you based on transfer credit and professional background. CNU does not issue Prior Experiential Learning credit for years of workplace experience, but the committee does review the entire portfolio to determine the best program structure for each student.

# Application & Admissions

## **Frequently Asked Questions**

Do I need to have majored in Engineering as an undergraduate in order to apply for an Engineering Degree?  
*No. But, applicants should be able to demonstrate that they have an academic background in algebra, plane geometry, trigonometry, physics and chemistry. If an applicant lacks this background, prerequisite courses will be assigned from the CNU Basic Science curriculum. Students who have not taken Calculus I will be required to take a math placement test in the field that they are applying to.*

What kind of financial support does CNU provide?

*CNU provides a military scholarship to eligible active military and their spouses to meet the gap of the GI Bill. \_*

How long should the essay in my application be?

*The essay is generally 3–4 paragraphs, but should be no more than 2 pages, double spaced.*

Should supplemental materials (letters of recommendation, transcripts) be sent all in one package or sent separately?

*Either method is fine. If the applicant is sending all of these items in themselves, the letters of recommendation should be in sealed envelopes with the recommender's signatures across the envelope flap. Also, the transcripts should be in sealed envelopes as well.*

If you have any other questions, please email CNU's Senior Admission Advisor, Cynthia Speed — [cnuadmin@mail.cnuas.edu](mailto:cnuadmin@mail.cnuas.edu)

## **Application Process**

California National University accepts student applications on a continuous basis, so admission can occur any time during the year. Choosing an institution should be based upon a careful assessment of your priorities. We encourage applicants to become informed about all available options, so you feel confident about both the process and the end result when you select California National University.

## **Pre-Advising**

The pre-advisement process starts with a courtesy contact from an Admissions Advisor. An important aspect of pre-advisement is to assist you in becoming familiar with the concept of distance learning instruction and to recognize the motivation and self-direction it requires. Another purpose is to facilitate your gathering the appropriate data for the Admissions Portfolio.

## **Preparing Your Portfolio**

The Admissions Advisor will:

- Discuss your background and goals to determine if they relate to the degree of interest.
- Confirm what documentation is needed for the Admissions Assessment.
- Verify what you have submitted is complete and ready for assessment.
- Present your portfolio to the Admissions Committee.
- Assist you or your company representative with reimbursement questions.
- Process your enrollment.

### **Submitting Your Application**

Our admissions process is based upon mutual review. If it is jointly decided that this program meets your education needs, then we ask you to submit for consideration:

#### **The completed Degree Program Application.**

Documentation of college-level learning relevant to the curriculum for which you are applying (e.g. official transcripts, certificates, resume) which become your evaluation portfolio.

- Admissions Essay
- Supervisor's Evaluation (optional)
- A non-refundable application fee of \$75.00 for U.S., Canadian, and International Residents

Note: Applicants with foreign education records, degrees, and diplomas will be required to have a professional review and evaluation of their documents in terms of U.S. educational equivalences.

## **Tuition & Fees**

### **Degree Tuition**

#### **Degree Program Enrollment**

California National University has a moderate tuition, so that individuals already encumbered with financial obligations are not restricted from seeking continued education. Although tuition is subject to change each year, every effort is made to guarantee it remains low.

Our tuition is based on individual 15 week trimesters; with the recommendation students take two courses per trimester, making it possible to complete their course of study in an efficient amount of time. Tuition is charged by the unit.

#### **Tuition & Fees**

##### **U.S., Canadian, and International Residents**

Bachelor's \$300.00 per unit

Master's \$330.00 per unit

**Human Resource Certificate Program per Course - \$900.00**

**QAS 301 Six Sigma Green Belt Certificate Program\*\* - \$1285.00**

**QAS 401 Six Sigma Black Belt Certificate Program\*\* - \$1985.00**

#### **Extension Course Enrollment**

Students may enroll in Extension courses if they are not seeking a Degree Program. Extension students are charged a non-refundable application fee of \$25 for up to two courses during one trimester.

Extension courses are **\$300 per unit** for undergraduate courses and **\$330 per unit** for graduate courses, plus textbooks and shipping costs. The payment plan option is not available for extension students. Tuition must be paid in full upon enrollment.

#### **Note:**

\*\*Tuition for Six Sigma Green Belt is based on 6-week schedule, Tuition for Six Sigma Black Belt is based on 8-week schedule.

## **Tuition Deferment**

Students seeking to defer payment of tuition because of Military or Company reimbursement are required to pay for textbooks and shipping before course of instruction can begin. They will be charged a \$150.00 non-refundable fee per course if payment is deferred. If the student takes the option to pay for tuition up front and collect their assistance afterward, there is no fee.

## **Tuition & Fees**

### **Mandatory Fees**

#### **Degree Program Application (Non-Refundable)\***

U.S., Canadian, and International	\$75.00
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#### **Registration Fee (Non-Refundable)\***

New Enrollment Package	\$75.00
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#### **Graduation\***

U.S. & Canadian	\$300.00
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Non-U.S. & Canadian	\$400.00
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Returned Check Fee	\$20.00
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Extension Program Application	\$25.00
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Readmission Fee	\$75.00
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Textbooks	Approximately \$150.00 per course
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Shipping	Varies according to student's geographical location
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#### **\*Application**

A non-refundable application fee of \$75 must accompany every degree program application for admission from U.S., Canadian, and International Residents.

#### **\*Registration**

A student withdrawing from CNU or dropping a course may only be assessed a one-time "registration fee" of either \$75 or 20% of the tuition charge per course (not to exceed \$200 per degree program).

#### **\*Graduation**

Each prospective graduate must file an Application for Graduation with the Office of the Dean of Academic Affairs. A \$300 graduation fee will be charged (\$400 for non-U.S. & Canadian), which covers the cost of the degree check, processing records, the diploma, and one transcript of the student's academic record at California National University.

#### **\*Late Payment**

Overdue payments are charged a late fee of 1.5% per month of the outstanding balance. Payments for Plan B will be automatically charged to the credit card when due. Students owing amounts from previous trimesters may be denied re-enrollment.

### **Optional Fees - (\*\*Non-Refundable)**

Alumni Association (Annual)	\$100.00
Binding**	\$60.00
Challenge Exam**	2/3 of tuition
Change of Degree Program**	\$100.00
Extra Diploma**	\$50.00
Math Placement Exam**	\$30.00
Payment Plan B	10% of tuition
Transcript (per regular copy)**	\$5.00 + \$2.00 processing fee
Transcript RUSH (per regular copy)**	\$25.00 + \$2.00 processing fee
Tuition Deferment**	\$150.00/course

### **Consequences for non-payment**

If a student defaults on a tuition payment, California National University has the following options:

1. The student may be dropped from all courses without credit.
2. Transcripts may be withheld.
3. Appropriate collections procedures will be initiated.

### **Payment Options**

#### **Plan A**

Payment in full (Total Trimester Tuition including fees)

#### **Plan B**

3 payments divided over the trimester according to the following:

1st Payment:

must include 1/3 of total trimester tuition, cost of textbooks and shipping if purchased from CNU, plus a processing fee of 10% of the total tuition.

2nd Payment:

must include 1/2 of remaining balance and is due 6 weeks after date of course enrollment.

3rd Payment:

must include remaining balance and is due 12 weeks after date of course enrollment.

#### **Note:**

Plan B option payment is by money order or credit card only, no checks.

Payment Options are not available for extension and certificate students.

Overdue payments are charged a late fee of 1.5% per month of the outstanding balance. Payments for Plan B will be automatically charged to the credit card when due.

## Office of the Registrar/Student Services

The Student Services Department is there to support your educational success. The Office of the Registrar and Student Services acts as a conduit for professor/student contact, accounting needs, information requests, transcripts, etc. Your education is their focus.

Student services works closely with all the departments to ensure you receive the most rewarding and effective college experience you can have.

### TOTAL COST PER YEAR FOR FULL TIME AND PART TIME STUDENT:

Actual expenses will vary based on educational lifestyle; the estimated costs listed below should assist you in planning your own budget.

The estimated budget represents a full time attendance for a full time student taking 4 courses every 15-weeks (12 courses yearly). The estimated budget is made up of direct (tuition and fees) and indirect costs (books and supplies).

#### Full Time Student

<b>Tuition:</b>	<b>Bachelor's Degree</b>	<b>Master's Degree</b>
	\$10,880.00	\$11,880.00

**Textbooks: (\$150.00 to \$300.00 per course or higher)**

The estimated budget represents part time attendance for a part time student taking 2 courses every 15-weeks (approximately 6 courses yearly). The estimated budget is made up of direct (tuition and fees) and indirect costs (books and supplies).

#### Part-Time Student

<b>Tuition:</b>	<b>Bachelor's Degree</b>	<b>Master's Degree</b>
	\$5400.00	\$5940.00

**Textbooks: Textbooks: (\$150.00 to \$300.00 per course or higher)**

*The California National University reserves the right to modify or change the contents in the student budget without notice.*

*\*\*Information subject to change without notice due to changes in federal, state and/or institutional rules and regulations.*

## **STUDENT'S RIGHT TO CANCEL AND REFUND POLICY**

California National University for Advanced Studies (CNU) guarantees that students will have access to their course study guides, via e-mail, US mail, or Internet by the selected Start Date of the Trimester. The student has the Right to Cancel by notifying the CNU Registrar in writing within five (5) days of enrolling and will receive a full refund of course fees paid to CNU. If a student cancels in writing after five (5) days of enrolling but before the Start Date, the student will receive a full refund minus a Non-Refundable Registration Fee of 20% (not to exceed \$200) per degree program. Students requesting cancellation during subsequent weeks from their start date are entitled to the amounts listed in the chart below.

<b>15-Week Course</b>	<b>Refundable Tuition Due After</b>
1-16 Weeks	1st Week = 80%
	2nd Week = 70%
	3rd Week = 60%
	4th Week = 50%
	5th Week = 40%
	6th Week = 30%
	7th Week = 20%
	8th Week = 10%
	9th Week - 15th Week = 0%

<p><b>CNU shall make all refunds within 30 days of cancellation. All Notices of Withdrawal or Requests for Refunds Must Be Submitted In Writing</b></p>
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**SEND TO:**  
**Registrar's Office**  
**California National University for Advanced Studies**  
**8550 Balboa Blvd., Suite 210**  
**Northridge, CA 91325**

## TRANSCRIPT REQUESTS

The University must have written permission from the student to release transcripts. The following information should be included in the request:

- Current and all former names
- Program of Study
- Social Security number
- Date of Birth
- Current mailing address and phone number
- Approximate dates of attendance
- The number of copies required
- A complete name and address of where the transcript should be sent
- Appropriate fees (\$5.00 per transcript, plus a \$2.00 processing charge per order)
- Transcript RUSH orders will be processed at (\$25.00 per transcript RUSH, plus a \$2.00 processing charge per order)

**Please send all requests to:**

California National University for Advanced Studies  
Attention: Registrar's Office  
8550 Balboa Boulevard, Suite 210  
Northridge, CA 91325

Students may call 818-830-2411 or fax the request to 818-830-2418, Attention: Registrar's Office: **Important Note:** If there are pending grades or degrees to be awarded and the transcript should not be sent until the grades/degrees are posted to the transcript, please indicate on the order that the transcript should be held for grades and/or degrees to be posted. **Service hours:** The transcript ordering service operates 24 hours a day, 7 days a week. However, the requests are processed Monday through Friday during normal business hours.

**Method of payment:** VISA, MasterCard, American Express

**Special handling services:**

Overnight Express is \$18.00 per destination, plus transcript fee.

You may request this service for overnight delivery within the continental United States only. Express Mail is \$40.00 per destination, plus transcript fee.

You may request this service for express delivery outside the continental United States only.

## **Non-Discrimination Policy**

It is the established policy of California National University for Advanced Studies to provide equal rights, privileges, programs and activities available to all of our students.

All CNU applications are evaluated and acceptance is determined solely on the basis of the academic and experiential backgrounds of the potential students, without regard to race, color, religion, national and ethnic origin, ancestry, sex, age, marital status, medical condition or physical handicap or any other form of unlawful discrimination.

CNU does not maintain nor provide for its students any segregated facilities. This policy is communicated to all CNU employees. All Faculty and staff are relied upon for their wholehearted support to make our nondiscriminatory programs successful.

## **Rights to Privacy**

In order to protect the privacy of CNU students' and graduates' records and to remain in compliance with the Family Education Rights and Privacy Act of 1974 (FERPA), the only information provided is: a student's name, degree program, dates of enrollment or graduation date and/or degree title. No additional information will be provided unless a written release statement, signed by the student or graduate, is attached to the request for information.

## **Academic Freedom Statement**

The Faculty of California National University has complete academic freedom in the discharge of their responsibility of imparting the state-of-art education to their students. This will not imply dissemination of narrow, divisive political, religious or ethnic biases among the students.

The Faculty will:

- Seek And Promote The Truth As Perceived
- Exercise Critical Self-Discipline
- Encourage The Pursuit Of Learning
- Foster Honest Reasoned Conduct
- Exercise A Caring, Judicious Authority With Their Students
- Ensure The Evaluation Of Students Reflects Their True Merit

Research and study by participating Faculty is encouraged because California National University is convinced that such activities foster an enhanced educational value for the students. Presentation of papers at relevant conferences and travel to seminars is encouraged.

## **Sexual Assault Policy**

### *Policy and Implementation Process for Addressing Access to Information and Treatment of Students, Staff, and Faculty for Sexual Assault:*

California National University is an online learning institution, and since there is no classroom attendance, the likelihood for sexual assault to occur is almost nil. However, should it occur, any student, staff or Faculty member is encouraged to pursue the matter through the procedures described below:

A student, staff, or Faculty member may initiate an informal complaint by speaking to any member of the Sexual Harassment Committee appointed by the Vice-President of Student Affairs/Registrar and which will be composed of the two Deans, two Faculty members (male, female), one staff member, and one student (when possible). The committee will provide an opportunity for confidential discussion, advice, and investigation to determine if a formal complaint should be lodged. This is a confidential process and the name of the complainant will not be revealed to the respondent whose conduct is at issue or to anyone else without the complainant's permission.

The complainant may choose, instead, to file with the Vice President of Student Affairs/Registrar a formal complaint, which is written and sets forth the alleged facts. If a formal investigation indicates the complaint is well founded, a formal hearing will be held and a committee appointed. The hearing will be confidential and procedures will be consistent with state law requirements for private employers making decisions that could lead to suspension or termination of employment.

## **Hours of Operation**

Hours of operation, including holiday schedule and faculty/instructor's availability.

CNU courses are self-paced courses through asynchronous learning. The Blackboard Learning Management System is available 24-hours a day. This means the student does the assignments within the 15 weeks required within time limits. This includes reading the materials, completing projects, and taking quizzes or tests. For a self-motivated learner, they are in control of the learning – the when, where and how are all up to you.

In order to provide feedback to students as quickly as possible, CNU requests that Faculty:

- Log in to each of their courses in Blackboard a minimum of twice a week and to respond to students within two business days.
- Make sure that all assignments are posted in each course and are available to students.
- Provide specific feedback on each student submission of homework in the online course Results Center.
- Provide a grade for each student submission of homework in the online course Results Center.

## **Explanation of grading policies, transfer of credits and equivalents**

### **Grading Systems**

Professors will provide feedback and a grade for each student assignment within two business days of submission/receipt and post the grade in the Online Campus course Results Center. Please advise the office of the Vice President of Student Affairs/Registrar of any changes in procedure.

Grade Point Average Scale (GPA):

A	= 4.0	C	= 2.0
A-	= 3.7	C-	= 1.7
B+	= 3.3	D+	= 1.3
B	= 3.0	D	= 1.0
B-	= 2.7	D-	= 0.7
C+	= 2.3	F	= 0

### **Expectations for maintaining satisfactory academic progress.**

The following Expectations of Successful Online Course Completion is posted in the Announcements area of Blackboard:

- Make certain that you understand all expectations for the course.
- Ask your Professor for clarification if you have questions about assignments and course requirements.
- Keep up with readings and coursework requirements. Your Professors expect you to adhere to due dates for assignments, quizzes, tests, etc. and may mark you down or issue you zero credit if assignments are not uploaded the week they are due.
- Remember that Interactivity counts towards the grading process as 10% of your overall grade in the course. The Discussion Forum is designed for you to think conceptually and analytically and to apply the basic principles and ideas you are studying to your own situation or career.
- Keep in mind that a course extension is not a substitute for good time management and timely course progress. In order to be considered for a course extension you must have satisfactorily completed and submitted 50 percent of the coursework.
- Make sure you have read and understand CNU's Policies on Course Extensions and Incompletes. The policies are posted in Blackboard under "Announcements."

**Acceptance of Credits to Another University:** As is the case with any college/university, the acceptance of credits from CNU is at the discretion of the accepting institution.

**CNU Transfer Credit:** is awarded for courses taken at an accredited\* post-secondary institution in which a grade of "C" or better was received, and the course is applicable to/equivalent to the courses at CNU.

Standardized tests such as the College-Level Examination Program(CLEP) offer a desirable means for adult-learners to receive academic credit for what they know. CLEP exams mostly cover General Education content area courses.

Credit may also be granted for military coursework and occupational specialties.

**\*Listed in the ACE Directory of Accredited Institutions of Post-Secondary Education**

# **Student code of conduct and academic and non-academic dismissal policies**

## **Good Academic Standing**

### **Required Cumulative GPA:**

Bachelor's Degree: Required minimum cumulative (GPA) 2.0

Master's Degree: Required minimum cumulative (GPA) 3.0

Students are expected to maintain continuous progress toward their degree by completing courses in a timely fashion. A student must have a weighted cumulative grade point average of 2.0 in the Bachelor's Degree Program and 3.0 in the Master's Degree Program.

### **Academic Probation**

Students are placed on Academic Probation when they have two incompletes or their cumulative GPA falls below a 2.0 (undergraduate) or 3.0 (graduate). A student on academic probation is placed on a limited course load under faculty supervision and must work under monitored study to complete all course work from previous enrollment periods and/or improve grades to the minimum required GPA.

### **Administrative Withdrawal**

Students are Administratively Withdrawn from the University if, for a period of twelve (12) months, administration has not been able to make contact with a student and the student has made no effort to contact the University. The student is no longer considered enrolled in a degree program and must re-apply to re-enter a CNU degree program.

### **Assessment and proctoring procedures**

CNU Proctor Policy: CNU requires that at least one exam, typically the Final Exam, be taken under the supervision of a Proctor for each course and that this exam contribute at least 30% of the course grade. Students are expected to submit to the University for approval, the name of a Proctor, their address, and means of contact by completing the required Proctor Information Form.

A proctor should be a citizen of the students' community that holds a position of integrity, such as a workplace supervisor, a librarian, teacher, minister, rabbi, law enforcement officer, etc. A Proctor CANNOT be a friend, family member, or anyone related to the student by marriage.

#### **Procedure Before an Examination:**

The required Proctor Information Form must be submitted to CNU within two weeks of your official start date. Failure to submit your Proctor Information Form to CNU will prevent you from taking proctored exams in your courses.

Once CNU receives your Proctor Information Form, your proctor will be verified. If approved, a confirmation of approval will be sent to you. If your proctor is not approved, CNU will request that you select another proctor. Your proctor's information will remain on file for all future courses unless CNU is notified that you wish to submit another proctor for consideration.

Professor and student should arrange for a mutually acceptable time and date for the exam to be taken under the Proctor's supervision. Prior to the exam date, the professor or CNU Administration e-mails, faxes, or mails directions for taking the exam (e.g., time allowed, materials allowed) and other relevant information (e.g., if the exam is to be taken in printed format) to the Proctor.

If the exam is in online format, the professor will provide the Proctor with the password to open the exam.

### **Procedure During an Examination:**

Students are expected to conduct themselves in an honorable manner. For examinations, students are advised that only those materials that have been allowed by the professor are permitted. Examinations may be either open-book or closed-book, as determined by the professor.

All unauthorized materials should be removed by the proctor. If the exam is timed, five minutes prior to the designated time is over, the proctor will give a warning that the examination period is almost over. A one-minute warning will also be given.

### **Student complaint or grievance policies and procedures / Student Rights**

If a student has a grievance with a California National University for Advanced Studies staff member or instructor, the student is to submit the grievance to the Vice President of Student Affairs/Registrar in writing (e.g. by e-mail or posted letter). A grievance is that which is defined as any matter concerning or related to admissions issues; administrative issues; financial issues; technical issues; faculty performance; grading; program and course content; program and course effectiveness and expectations, and library services. The Vice President of Student Affairs/Registrar will respond in writing within fifteen (15) days, and copy the response to the Academic Deans.

If the student feels the grievance has been resolved unsatisfactorily, he or she may submit a written grievance to the Academic Deans. The Academic Deans will respond in writing within fifteen (15) days, and copy the response to the President of the University.

If the student still feels the grievance has been resolved unsatisfactorily, he or she may bring it to the President of the University. The student's grievance will be addressed by the President within thirty (30) days. The President's decision will be final. Records of all grievances are kept on file at the University.

### **Plagiarism/Cheating**

California National University adheres to the commonly accepted definition of plagiarism as the action of representing another's words or ideas as one's own without making reference to the original author. If it is determined by a student's professor, another member of the Faculty, or a CNU staff member that plagiarism or cheating is suspected, the Academic Deans will review the case to determine if the student will receive credit or not for the course or project in which the offense occurred. If plagiarism or cheating recurs, the student's enrollment at California National University for Advanced Studies may be terminated.

### **Procedures for Violations of Ethical Practices**

Once notice of a violation of ethical practices has been submitted to the Vice President of Student Affairs/Registrar, an investigation will be conducted to determine if there is substantial evidence. Dependent on the findings, a decision will be made by the Academic Deans as to a student's (a) loss of credit or (b) termination of enrollment from the University. Students will be notified in writing of the disciplinary decision and informed that this decision is binding.

### **Academic Deans**

In conjunction with the Vice President of Student Affairs/Registrar, the Academic Deans' main function is to set academic policy, to ensure that faculty and students uphold the University's standards and to review special circumstances when exceptions need to be considered. The Vice President of Student Affairs/Registrar and the Academic Deans determine policies and procedures for student/Faculty interaction, grievance, disciplinary action, admission standards, and the awarding of degrees.

## **Graduation Requirements**

### **General Graduation Requirements**

California National University grants a degree when ALL of the following requirements are completed:

#### **Satisfactory Completion of the Required Units**

When in the judgment of the academic staff, a student demonstrates competence in his/her chosen degree program and successfully completes all of the designated requirements.

**Required Courses** A student must successfully complete all prerequisite and required courses for the designated degree program, including General Education requirements and a Capstone Project for the bachelor degree program.

**Math and written expression proficiencies** Prior to graduating, undergraduate students will demonstrate competency in college-level mathematics skills and written expression in the English language through successful completion of General Education requirements and/or math placement tests.

**Satisfactory Academic Performance**

California National University students are expected to abide by the scholastic regulations of the institution and to maintain minimum standards of academic achievement. A cumulative 2.0 Grade Point Average is required for earning a Bachelor's degree and a 3.0 for completion of a Master's degree.

**Satisfaction of Financial Obligations** No student will be enrolled for the next trimester or granted a degree unless he/she has satisfied all financial obligations to the University. Grade Reports, Transcripts and Diploma will also be withheld.

## **Standards for Students and Faculty**

### **Standards for Students:**

California National University for Advanced Studies takes pride in the integrity of its instructional programs and the established standards for academic excellence. Any violation of these principles will not be tolerated.

**Online Learning** students are expected to follow the same ethical practices required in traditional learning settings. Any deviation may be considered grounds for terminating enrollment.

Behaviors considered to be unacceptable at CNU are:

A. Cheating During Examinations

B. Changing Already Graded Work

C. Soliciting a Student to Impersonate Another by Sitting for an Exam or Sitting for an Exam in the Name of another Student

D. Submitting Any Materials to the University That Are Not the Original and Unchanged Materials of the Student

E. Using Unprofessional Language in Communication with CNU Faculty or Staff or Demonstrating Disrespect

## **Standards for Faculty:**

California National University for Advanced Studies takes pride in the integrity of its instructional programs and the established standards for academic excellence. Any violation of these principles will not be tolerated. CNU Faculty are expected to follow the same ethical practices required in traditional learning settings. Any deviation may be considered grounds for terminating future student enrollment. Behaviors considered to be unacceptable at CNU are:

- A. Using unprofessional language in communications with CNU Staff or students or demonstrating disrespect towards CNU Staff or students
- B. Discrimination
- C. Sexual Harassment

## **Change of Status**

This page contains the following important information:

- Leave of Absence
- Stop-Out Status
- Non-Status

### **Leave of Absence**

A leave of absence is an approved trimester of non-registration. Students may take one leave of absence during a calendar year. Upon returning from a leave of absence, students complete whatever time remaining in their enrollment agreement at the time the leave began. The student must complete and file an approved Leave of Absence form with the Registrar during regular registration. Failure to submit the form will subject the student to withdrawal from the University, a readmission charge of \$75, and the possibility of having to meet changed academic requirements in force at the time of readmission.

### **Stop-Out Status**

Students may stop-out at the end of an enrollment period. Stop-out Status occurs when a leave of absence extends for longer than a trimester. Students stopping out for longer than six months, but less than one year, are dropped from the degree program but need not reapply to re-enroll. At the time of re-enrollment, a student will be assessed a readmission fee of \$75 and face the possibility of having to meet changed academic requirements in place at the time of readmission. Students who for more than one year are not actively studying in their degree program are placed on Administrative Withdrawal and must reapply for admission.

### **Non-Status**

The University makes every effort to keep in contact with students. If the University has not been able to make contact with a student and the student has made no effort to contact the University for a period of twelve (12) months, the student will be considered a non-status student. This means that the student will no longer be enrolled in the degree program and any tuition being held by the University will be forfeited after the twelve (12) month period



## **Tuition Assistance**

Many California National University students receive tuition reimbursement from major corporations and small companies who approve CNU programs. Explore this opportunity with your employer. CNU Student Services are there to help you in the process.

### **G.I. Bill and VEAP**

California National University for Advanced Studies is approved to participate in the voluntary education tuition assistance program administered by the Defense Activity on Non-Traditional Education Support (DANTES). Active duty military personnel and reservists should contact their education office for more information. All CNU programs are approved for Veterans Benefits under the G.I Bill and VEAP. [www.va.gov](http://www.va.gov). If you are eligible and wish to receive tuition assistance under one of these programs, contact your local VA office or education office to receive an eligibility certificate.

### **Payment Plan Options**

3 payment plan options are available, including 1) payment in full, 2) 3 payments divided over the trimester (includes a 10% finance charge assessed against tuition only), or 3) tuition deferment for those students who receive tuition assistance from their employer (includes a \$150.00 per course fee). Textbook, supplemental course materials and shipping and handling charges must always be paid before course of instruction can begin regardless of the payment plan option. NOTE: Overdue payments are charged a late fee of 1.5% per month of the outstanding balance. Payment plan options are not available for extension students, Six Sigma Green Belt, Six Sigma Black Belt or HR Certificate program students.

## **Military Tuition Assistance**

California National University for Advanced Studies is approved to participate in the voluntary education tuition assistance program administered by the **Defense Activity on Non-Traditional Education Support (DANTES)**. Active duty military personnel and reservists should contact their education office for more information.

[http://www.dantes.doded.mil/DANTES\\_Homepage.html](http://www.dantes.doded.mil/DANTES_Homepage.html)

All CNU programs are approved for Veteran's Benefits under the **G.I. Bill and Veterans Educational Assistance Program (VEAP)**. If you are eligible and wish to receive tuition assistance under one of these programs, contact your local VA office or education office to receive an eligibility certificate.

[www.va.gov](http://www.va.gov)

CNU adheres to the standards of the **SOC (Servicemembers Opportunity Colleges)**.

<http://www.soc.aascu.org/>

# Frequently Asked Questions

## About CNU

**Q:** Is California National University (CNU) accredited?

A: CNU is nationally accredited by the Distance Education and Training Council (DETC), Washington D.C. ([www.detc.org](http://www.detc.org)). The Accrediting Commission of the DETC is listed by the U.S. Department of Education as a nationally recognized accrediting agency and as a recognized member of the Council of Higher Education Accreditation (CHEA). CNU is listed in the American Council On Education Directory and in the Higher Education Directory

**Q:** How does distance learning at CNU work?

A: You will need a computer and access to the Internet. Distance Learning at CNU includes one-on-one communication with your professors. This process guarantees you maximum feedback and support by an expert in the field. Currently this contact is made through two delivery systems. Both systems provide you with a sequential course syllabus, assignments and guided learning experience. Many of our courses are being taught in the CNU Online Campus learning platform. Here, students access their course documents anytime from anywhere. They complete and submit assignments online. Students interact with their professors and virtual “classmates” and even take exams and receive faculty feedback and grades online.

**Q:** How much does it cost?

A: CNU's tuition is based on 15-week trimesters; with the recommendation students take two courses per trimester. Tuition is charged by the unit or credit hour. U.S., Canadian, and International Residents are charged **\$300.00** per unit/credit hour for a Bachelor's program or **\$330.00** per unit/credit hour for a Master's program.

3 payment plan options are available including 1) payment in full, 2) 3 payments divided over the trimester (includes a 10% finance charge assessed against tuition only), or 3) tuition deferment for those students who receive tuition assistance from their employer (includes a \$150.00 per course fee). Textbook, supplemental course materials and shipping and handling charges must always be paid before course of instruction can begin regardless of the payment plan option. **NOTE: Overdue payments are charged a late fee of 1.5% per month of the outstanding balance.**

**Q:** Does California National University offer financial aid?

A: CNU is approved for you to use the voluntary education tuition assistance program administered by the Defense Activity on Non-Traditional Education Support (DANTES) as well as approved for Veterans Benefits under the G.I. Bill and VEAP.

**Q:** Why should I choose CNU?

A: To stay competitive in today's market, one must be continually learning. But how does one find time to drive to a campus and go to a classroom while still working and meeting family commitments? CNU provides a flexible and individualized program that recognizes the needs of the adult learner and mid-career professional without ever having to compromise academic excellence. Although you never have to attend classes, you are guaranteed one-on-one instruction from an esteemed faculty, whereby you receive timely feedback through regular contacts with your professors. With an accredited curriculum, CNU will provide you with the tools, the skills and the knowledge so you can continue to grow professionally and financially throughout your life

**Q: What are my student rights and how do I file a grievance with the university?**

A: Students may appeal decisions of faculty and staff of the University and its policies by filing a formal grievance petition in the form of a letter addressed to the Vice President of Academic Affairs. The Vice President, along with the academic deans, will constitute the Grievance Committee. This Committee will review and research all facets of the student's concerns and provide the student with a report of its findings.

**Q: What is California National University for Advanced Studies' attendance policy?**

A: Day-to-day attendance is not taken by the professor. However, the expectation is that the student is working independently to meet the 15-week course deadline.

**Q: Does the university provide housing?**

A: California National University for Advanced Studies is an online learning university. We do not have a physical campus, nor do we have dormitory facilities under our control. California National University for Advanced Studies does not provide student housing and the university assumes no responsibility for finding housing for students or assisting students in finding housing.

**Q: What is CNU's policy on the retention of student records?**

A: The California Code of Regulations, Title 3, Division 10, Private Postsecondary Education requires an institution to maintain student records for a minimum of five years and a transcript of grades for a period of 50 years.

## **Frequently Asked Questions**

### **Admissions**

**Q: What is involved in the application process and how long does it take to get started?**

A: The application process involves submitting the Degree Program Application to CNU along with your Essay and the application fee. The Degree Program Application can be mailed in or you can apply online. Also included in the application process is having your Official Transcripts mailed to CNU by any and all colleges you attended.

Once the evaluation of the admission materials is completed by the Admissions Committee, and the applicant is accepted, the applicant is mailed his or her Enrollment Agreement, Degree Program Evaluation, Acceptance Letter, and Textbook Memorandum.

The applicant is admitted when the signed Enrollment Agreement and payment are received by CNU. Courses begin on the Friday determined by the student on his/her Enrollment Agreement.

**Q: Are California National University credits transferable?**

A: There is never complete assurance that credits will transfer. As is the case with any college/university, the acceptance of credits from CNU is at the discretion of the accepting institution.

**Q: What does California National University accept as transfer credit?**

A: Transfer Credit is awarded for courses taken at an accredited\* post-secondary institution in which a grade of "C" or better was received, and the course is applicable to/equivalent to the courses at CNU.

Standardized tests such as the College-Level Examination Program(CLEP) offer a desirable means for adult-learners to receive academic credit for what they know. CLEP exams mostly cover General Education content area courses.

Credit may also be granted for military coursework and occupational specialties.

### **\*Listed in the ACE Directory of Accredited Institutions of Post-Secondary Education**

#### **Q: If I am an International student, what is required?**

A: Submission of the Degree Program Application, your Essay, the \$75 (non-refundable) Application Fee, and, if you attended a post-secondary institution in a country other than US/Canada, you must have your transcript(s) evaluated by a Foreign Transcript Evaluation Agency approved by CNU. Also, a condition for admittance of international students is they must demonstrate adequate English language proficiency and have access to a computer. A score of 213 on the computer-based Test of English as a Foreign Language (TOEFL) or a score of 550 on the paper-based test is the minimum accepted.

#### **Q: Do I need to have majored in Engineering as an undergraduate in order to apply for an Engineering Degree?**

A: No. But, applicants should be able to demonstrate that they have an academic background in algebra, plane geometry, trigonometry, physics and chemistry. If an applicant lacks this background, prerequisite courses will be assigned from the CNU Basic Science curriculum. Students who have not taken Calculus I will be required to take a math placement test in the field that they are applying to.

#### **Q: What kind of financial support does CNU provide?**

A: CNU provides a military scholarship to eligible active military and their spouses to meet the gap of the GI Bill.

#### **Q: How long should the essay in my application be?**

A: The essay is generally 3–4 paragraphs, but should be no more than 2 pages, double spaced.

#### **Q: Should supplemental materials (letters of recommendation, transcripts) be sent all in one package or sent separately?**

A: Either method is fine. If the applicant is sending all of these items in themselves, the letters of recommendation should be in sealed envelopes with the recommender's signatures across the envelope flap. Also, the transcripts should be in sealed envelopes as well.

## **Frequently Asked Questions**

### **Academics**

#### **Q: How do I start my courses?**

A: When you receive your enrollment agreement for the trimester you will be given your choice of two different Friday start and end dates for your courses. After you indicate your selection of dates and return the agreement to CNU administration, your professors will be notified of your start date.

For courses in the online environment, you will receive e-mail notification of your user codes for access to your courses online. For courses not yet in the online environment, you will receive a student packet via U.S. mail or e-mail

#### **Q: What do I do if I run into difficulties with a course?**

A: Students, Faculty and Administration are communicating on a regular basis via e-mail, fax and phone etc., so any problems which may arise can be resolved as quickly as possible. If circumstances require a delay in

completion of the course, a Course Extension Request may be filed. If circumstances occur which prevent continuous enrollment, a Leave of Absence is provided to accommodate the situation.

**Q: How do I take my exams?**

A: California National University for Advanced Studies requires that at least one exam, typically the Final Exam, be taken under the supervision of a Proctor for each course. For approval, the student is expected to submit to the University, the name of a Proctor, their address, and means of contact by completing a required Proctor Information Form.

The site for taking any exam is to be approved by the professor. However, the exam cannot be taken or administered at the student's home.

A proctor should be a citizen of the student's community that holds a position of integrity, such as a workplace supervisor, a librarian, teacher, minister, rabbi, law enforcement officer, etc. A Proctor cannot be a friend, family member, or anyone related to the student by marriage. The Proctor will be notified by the professor of the time and date of an exam and will be sent the exam with instructions to return it to the professor upon completion. Students are never required to travel to a central location in order to take an exam.

Some exams are taken online through the course site located in the CNU Online Campus

**Q: What about graduation?**

A: A degree is granted by CNU when in the judgment of the Deans and Faculty you have completed all designated requirements. You have six years to complete the program according to the requirements in effect at the time of your enrollment. If you do not complete your program within the six-year period, you may be obligated to fulfill any new requirements in place at the time of your next enrollment to graduate. Prospective graduates must file an Application for Graduation no later than 15 weeks prior to the expected date of graduation. Final determination of eligibility is dependent on a Degree Check for Advancement to Candidacy, approval of the supervising Faculty and the Dean of Academic Affairs. A student may graduate with honors signifying achievement of scholastic excellence. The diploma will bear one of the following inscriptions:

Summa Cum Laude (minimum of 3.8 GPA) Magna Cum Laude (minimum of 3.6 GPA) Cum Laude (minimum of 3.3 GPA)

The Administration and Faculty wish to recognize the academic achievements of CNU Outstanding Graduates who have pursued their degrees through distance learning. Students who have graduated with honors are invited to join the Beta Chapter of the Delta Epsilon Tau International Honor Society

**Q: What is California National University for Advanced Studies' attendance policy?**

A: Day-to-day attendance is not taken by the professor. However, the expectation is that the student is working independently to meet the 15-week course deadline.

**Q: How can I get credit for prior experiential learning?**

A: Students seeking credit for related academic experience that directly relates to specific California National University for Advanced Studies courses may seek credit by applying for a Challenge Examination for each course they are seeking credit.

Students are encouraged to give careful consideration before beginning the Challenge Examination Process.

Some courses that are project oriented may not be appropriate for challenge by exam. Students should understand that what they believe is applicable background for successfully passing a Challenge Examination may not be adequate or complete enough to meet the criteria for the CNU course in question. Note that a successful course challenge will require the student to provide documentation of prior learning, pass a proctored examination, and may require additional assignments as determined by the instructor of the course being challenged.

A student must successfully pass the Challenge Examination in order to receive credit for the course.

## **California National University Graduates**

### **Graduation with Honors**

Graduation with Honors signifies recognition of a student's achievement of scholastic excellence during the completion of his or her program of study with California National University for Advanced Studies.

Graduation honors are awarded in the following manner:

Summa Cum Laude: 3.8-4.0 GPA

Magna Cum Laude: 3.6-3.7 GPA

Cum Laude: 3.3-3.5 GPA

### **Honor Society**

To recognize the academic achievements of CNU's Outstanding Graduates who have pursued their degrees through our distance learning program, California National University for Advanced Studies has established a Chapter of the Delta Epsilon Tau International Honor Society (DET).

Graduates must have a minimum of a 3.7 GPA to be invited to join the DET.

Honor Graduates receive the following recognition materials:

- Honor Society Gold Key
- Membership Certificate
- Honor Society Narrative and Overview
- Reference Letters for Honor Graduates (upon request)

The Distance Education and Training Council (DETC) Board of Trustees, in cooperation with the President of the Alpha Beta Kappa National Honor Society, officially established the Delta Epsilon Tau International Society in April 1997. For further information please refer to the DETC website at [www.detc.org](http://www.detc.org), Member Services.

## **Bachelor Degree Requirements**

- High School diploma or completed GED equivalent for admission.
- A minimum of 120 semester units [126 for the BSE] or their equivalent in other units of credit must be earned toward the degree.
- A minimum of 25% of the instruction toward the degree must have been earned at *CNU*.
- At least 25% of the Bachelor's degree must be in general education (30 semester units).
- Cumulative grade point average of 2.0 or better.

## **Master Degree Requirements**

- Students must demonstrate learning in their designated area of study that is equivalent in depth to that normally acquired in a minimum of 36 semester units of study beyond the Bachelor's degree.
- Documented Bachelor's degree or equivalent for admission.
- Thesis and other products submitted by students as part of a graduate program will be approved by a faculty committee from the school of study recommending the student for an award of a degree.
- At least 21 units of instruction toward the degree must be taken at CNU.  
Cumulative grade point average of 3.0 or better.

## **Computer, Email and Internet Access**

The use of computers, e-mail and the Internet are all essential to successful academic performance in the distance-learning environment. CNU students therefore, must own a computer or have access to one, and have an e-mail address and access to the Internet. The minimum recommended computer requirements for using CNU's online Campus are:

### **Platform:**

- PC (Windows 2000, XP, or higher)
- Mac (10.2 or higher)

### **Hardware:**

- 128 MB of RAM
- 2GB of free disk space
- CD ROM and DVD Drive
- Sound Card with speakers (for courses with multimedia)
- Ethernet or Wireless network card (for high speed Internet connection)
- T1, DSL, Cable, or Satellite high-speed connection
- A monitor capable of at least 800x600 resolution
- Virus software

**Applicants/Students with physical limitations that may impact their program of study should contact CNU administration at 800-782-2422 or [cnuadmin@mail.cnuas.edu](mailto:cnuadmin@mail.cnuas.edu) for accommodations.**

## **College of Business Administration Faculty**

The CNU Faculty is composed of distinguished professors who are currently working in industry and/or teaching in the field of Business or have been awarded emeritus status at their universities. The faculty represents diverse backgrounds with members having taught and earned their advanced degrees from nationally recognized traditional universities.

A full complement of faculty are committed to provide CNU students with continuous assistance and feedback. An integral part of this process is the interaction between students and faculty that has been built into CNU programs. Every course has been planned so that the student and professor have a variety of interactions during the trimester to promote the student's awareness of his/her progress in the course.

As a CNU student, you will be impressed by the benefits received and the enthusiasm expressed by the CNU faculty to further your education through online learning.

- Dee Andrews, M.A., Ph.D.

Florida State University  
HUMAN RESOURCES MANAGEMENT

- Tom Brennen, M.S.

University of Phoenix  
MANAGEMENT INFORMATION SYSTEMS

- Philip Chong, M.S., Ph.D.

University of Massachusetts  
MANAGEMENT, QUALITY CONTROL MANAGEMENT

- Steven J. Clayden, Ph.D.

Capella University  
MANAGEMENT INFORMATION SYSTEMS, COMPUTER SCIENCE

- Kurt H. Diesch, Ph.D.

Iowa State University  
MANAGEMENT INFORMATION SYSTEMS

- Rapush Durollari, M.S.

Golden Gate University  
MANAGEMENT INFORMATION SYSTEMS, QUALITY ASSURANCE SCIENCE

- Alan S. Gleit, Ph.D.

Stanford University  
FINANCE

## College of Business Administration Faculty

- Timothy Hart, J.D., M.A.

San Joaquin College of Law  
Washington State University  
BUSINESS LAW

- W. Eric Hogan, M.B.A.

Pepperdine University

Donald Hucker, M.B.A.

University of Southern California  
MANAGEMENT, COMPARATIVE MANAGEMENT SYSTEMS, SMALL BUSINESS  
MANAGEMENT, STRATEGIC PLANNING, INTERNATIONAL MANAGEMENT, BUSINESS  
ETHICS, HUMAN RESOURCE MANAGEMENT, GRADUATE STUDIES PROJECT

- Kevin Hurley, M.B.A.

University of Phoenix  
MANAGEMENT, FINANCE

- Amy Laptad, Ph.D.

Northcentral University  
Washington State University  
ENGLISH, BUSINESS COMMUNICATIONS

- Ronald D. McFarland, Ph.D.

Nova Southeastern University, Ft. Lauderdale  
MANAGEMENT INFORMATION SYSTEMS

- Melba Miles, M.B.A.

Golden Gate University  
INTERNATIONAL BUSINESS, HUMAN RESOURCES MANAGEMENT, MANAGEMENT

- Mary Jane Monaghan, M.Ed

University of Florida, Gainesville  
MANAGEMENT SCIENCE, QUALITY ASSURANCE SCIENCE, GRADUATE STUDIES PROJECT

- Victor Nunez, M.S., Ph.D.

Rutgers University; Northcentral University - Arizona  
ACCOUNTING, MANAGEMENT SCIENCE, QUALITY ASSURANCE SCIENCE

- Michael L. Rasak, M.A.

University of Detroit  
HISTORY

## **College of Business Administration Faculty**

- Edrin W. Rouse, M.S.

Eastern Michigan University  
QUALITY ASSURANCE SCIENCE

- Keith Thurgood, M.B.A., M.S.

Boston University, Army War College  
MANAGEMENT, HUMAN RESOURCES MANAGEMENT

- L. Neil Thurgood, M.S.

Naval Postgraduate School  
MANAGEMENT, HUMAN RESOURCES MANAGEMENT

- Carol Wells, Ph.D.

University of Connecticut  
MARKETING, HUMAN RESOURCES MANAGEMENT

- Caroline S. Westerhof, Ph.D.

New York University  
INTERNATIONAL BUSINESS, MANAGEMENT

## College of Engineering Faculty

The CNU Faculty is composed of distinguished professors who are currently working in industry and/or teaching in the field of Engineering or who have been awarded emeritus status at their universities.

The faculty represents diverse backgrounds with members having taught and earned their advanced degrees from nationally recognized traditional universities.

A full complement of faculty are committed to provide CNU students with continuous assistance and feedback. An integral part of this process is the interaction between students and faculty that has been built into CNU programs. Every course has been planned so that the student and professor have a variety of interactions during the trimester to promote the student's awareness of his/her progress in the course.

As a CNU student, you will be impressed by the benefits received and the enthusiasm expressed by the CNU faculty to further your education through online learning.

- Nader Bagheri, Ph.D.

University of California, Davis  
ENVIRONMENTAL ENGINEERING, MECHANICAL ENGINEERING, ENGINEERING

- Robert J. Batiste, B.S., M. A. ABD

Webster University,  
Graduate Certificate —I.S. University of Southern California (USC)  
University of Maryland  
- currently completing a PhD Capella University  
QUALITY ASSURANCE SCIENCES

- Tom Brennen, M.S.

University of Phoenix  
COMPUTER SCIENCE, COMPUTER ENGINEERING

- Violettee (Vi) Brown, M.B.A., M.S.

Arizona State University, Howard University  
ENVIRONMENTAL ENGINEERING, BASIC SCIENCES, CALCULUS

- Sam Chaudhuri, Ph.D.

University of Florida  
ELECTRICAL ENGINEERING, ENVIRONMENTAL ENGINEERING, COMPUTER  
ENGINEERING, MATHEMATICS

- Matthew “Marty” Chrenka, M.S.

Washington University, St. Louis  
COMPUTER SCIENCE

- James “Jim” Clauson, M.S.

Murray State University  
HUMAN RESOURCES MANAGEMENT

## College of Engineering Faculty

- Geza Csanky, Ph.D.

University of Southern California  
ELECTRONICS

- Kurt H. Diesch, Ph.D.

Iowa State University  
COMPUTER SCIENCE

- Rapush Durollari, M.S.

Golden Gate University  
COMPUTER SCIENCE, ELECTRICAL ENGINEERING, QUALITY ASSURANCE SCIENCE

- Richard Eckhart, Ph.D.

Pennsylvania State University  
CALCULUS, BASIC SCIENCES, MECHANICAL ENGINEERING

- Aly El-Iraki, M.Sc., Diplom-Engenieur, Ph.D.

Alexandria University, Egypt; Technical University, Berlin Germany  
ENGINEERING, MECHANICAL ENGINEERING

- Major Jeffrey Freedman, M.S.

Massachusetts Institute of Technology (MIT)  
ENGINEERING

- Bianca Gilyot, M.S.

Southern University at New Orleans  
COMPUTER SCIENCE

- Alan S. Gleit, Ph.D.

Stanford University  
BASIC SCIENCES

- Michael Walter Husarek, M.S.

National University, La Jolla  
ENVIRONMENTAL ENGINEERING

- Lawrence Kulinsky, Ph.D.

University of California, Berkeley  
BASIC SCIENCES, MECHANICAL ENGINEERING, PHYSICS

## College of Engineering Faculty

- Joseph Ledbetter, Ph.D.  
University of California, Davis  
BASIC SCIENCES, QUANTITATIVE CHEMISTRY, CHEMICAL THERMODYNAMICS
- Yulong Lio, Ph.D.  
South Carolina University  
COMPUTER SCIENCE, ENGINEERING, QUALITY ASSURANCE SCIENCE
- A. G. (Tony) Mazza, Ph.D.  
University of Toronto, Canada  
ENVIRONMENTAL ENGINEERING, PRECALCULUS
- Mary Jane Monaghan, M.Ed  
University of Florida, Gainesville  
ENGINEERING, STATISTICS, MANAGEMENT SCIENCE, MATHEMATICS, QUALITY ASSURANCE SCIENCE, GRADUATE STUDIES PROJECT ADVISOR
- George Nichols, M.S., Ph. D.,  
University of California, Davis;  
University of Nevada, Reno  
ENVIRONMENTAL ENGINEERING
- Victor Nunez, M.S., Ph.D.  
Rutgers University; Northcentral University - Arizona  
QUALITY ASSURANCE SCIENCE
- Michael Piliavin, Ph.D.  
California Institute of Technology Applied Science and Physics  
ELECTRICAL ENGINEERING, MECHANICAL ENGINEERING
- Xiangqun (Quentin) Qiu, Ph. D., P.E.  
University of Strathclyde, Glasgow, UK  
ELECTRICAL ENGINEERING

## College of Engineering Faculty

- Edrin W. Rouse, M.S.

Eastern Michigan University  
QUALITY ASSURANCE SCIENCE

- Wade Richards, B.S., M.S., Ph.D.

California Coast University  
California State University San Francisco  
California State University Hayward  
ENGINEERING, BASIC SCIENCES, PHYSICS & MECHANICAL ENGINEERING

- Robert Ryan, Ph.D.

University of California, Los Angeles  
MECHANICAL ENGINEERING

- Ed Samuels, M.S.E., M.B.A. and M.B.B.

California National University for Advanced Studies  
COMPUTER SCIENCE, QUALITY ASSURANCE SCIENCE

- Sangeeta Theru, M.S.

Texas A & M University  
COMPUTER ENGINEERING

- Jelena Vucetic, M.B.A., Ph.D.

University of Phoenix, University of Belgrade  
COMPUTER ENGINEERING, COMPUTER SCIENCE, ENGINEERING

- Charles Qinxian Wang, M.Ed.

University of Delaware  
ALGEBRA, MATHEMATICS, COMPUTER SCIENCE

- Roger Wells — ONC. , B.S., MBA, Ph.D.

Northcentral University Arizona  
Portsmouth College of Technology, England  
Southampton Technical College, England  
MECHANICAL ENGINEERING

## **General Education Requirement**

Students pursuing a Bachelor of Science in Engineering degree must complete a breadth requirement of 30 General Education units. Students may elect to take the College-Level Examination Program (CLEP) exams to meet this requirement instead or in combination with courses. Credit given for General Education courses taken through CLEP exams is based on passing scores as determined according to the range of acceptable scores established by the American Council on Education (ACE). Students have the option to fulfill general education requirements by choosing courses related to the subject areas listed below:

- Communications (written/oral)
- Computation (quantitative reasoning/concepts)
- Social Science (history, sociology, economics, and politics)
- Computer Technology & Practice
- Humanities (literature, philosophy, language, culture, the arts)
- Life/Physical Sciences

Although many students enter the University having fulfilled this requirement, some provisions have been made for those seeking to complete General Education coursework at *California National University*. Students have the option to fulfill general education requirements by choosing from the courses listed in the box on the next page; and/or applying certain courses required in the student's program or may receive transfer credit for courses completed at other schools.

### **Math Placement Test Requirement:**

Students who do not have transfer credit for Calculus I will be required to take a Math Placement Test before being enrolled in Math classes. The scores earned on the test will determine a student's starting point in the required math sequence. A \$30 administrative fee will be charged for the test administration.

## **General Education (30 Units)**

Advisement for General Education courses is offered on an individual basis.

### **ART 120 – Art History — (3 Units)**

*Prerequisite: None.*

This course focuses on art history and art enjoyment with clear understandings communicated of art within civilization. The range of time includes the Paleolithic to Modern Art. The topics are aligned with chronological developments, art movements and key concepts within Art History and Art Appreciation. This is an introductory course, which is designed to give the student a fundamental understanding of the creation and appreciation of diverse modes of expression through the visual arts. The course covers art within the context of Fine and Applied Arts.

### **ART 140 – Art History Rembrandt and Masters — (3 Units)**

*Prerequisite: None.*

***ART 120 is recommended but not required.***

This course focuses on art history and art appreciation of the works of Rembrandt, his pupils, and other masters—through studying the key concepts of art. The student will gain a fundamental understanding of the creation of diverse modes of expression through the visual arts. The course covers art within the context of fine and applied arts.

### **ART 150 – Modern Art History — (3 Units)**

*Prerequisite: None.*

***ART 120 is recommended but not required.***

This course focuses on contemporary art history and art enjoyment with clear understandings communicated of art within civilization. The range of time includes the Contemporary which is 1945 to now which is called either Modern Art or postmodern in the field of art history. The topics are aligned with chronological developments, art movements and key concepts within Art History and Art Appreciation. This course is designed to give the student a fundamental understanding of contemporary creation and appreciation of diverse modes of expression through the visual arts. The course covers art within the context of both Fine and Applied Arts.

### **ART 155 – Primitive Art History — (3 Units)**

*Prerequisite: None.*

***ART 120 is recommended but not required.***

This course focuses on the history and appreciation of primitive art. The range of primitive art styles and techniques is explored through the artistic traditions of different regions of Africa.

### **ART 158 – Advanced Primitive Art History — (3 Units)**

*Prerequisite: None.*

***ART 120 is recommended but not required.***

This course focuses on enjoyment of primitive art and the history of Pacific Islands (Oceania) art. Oceanic art will be studied within its cultural context and in comparison with African primitive art.

### **ART 160 – Asian Art History — (3 Units)**

*Prerequisite: None.*

***ART 120 is recommended but not required.***

This course focuses on Asian art enjoyment and art history. The main focus of the course will be concentrated on the range of Asian arts from the artistic traditions of prehistoric to modern Asia in relation to their philosophical and other influences. The art and architecture of Central Asia and other Asian countries (India, China, Korea, and Japan) will be covered.

Optional examples from Southeast Asia, Afghanistan, Pakistan, Tibet, and Nepal will also be examined as related to student research.

## General Education (30 Units) continued

### **ART 165 – Advanced Asian Art History — (3 Units)**

*Prerequisite: None.*

*ART 120 is recommended but not required.*

This advanced level course focuses on a fuller understanding of Asian art enjoyment and art history. The full exploration of Asian art will be compared and contrasted with international art influences. Art from China, India, Korea, Japan, and Thailand will also be examined in relationship to their philosophical and other cultural dynamic influences.

### **MATH 165. General Mathematics — (3 Units)**

*Prerequisite: None.*

A course designed for students in need of general mathematics skills. Topics include algebra, geometry and trigonometry, metric conversions and numerical computations as related to the various measurements needed within the manufacturing/shop environment.

### **MATH 175. Mathematics for Business Applications — (3 Units)**

*Prerequisite: A minimum of “C” grade in high school algebra and a minimum score of 60% on the algebra section of the math placement test, or permission of your professor.*

Mathematics applicable to problems in business and economics. Includes sets; linear, quadratic, exponential, and logarithmic functions; inequalities, matrices; differentiation; integration and extreme values.

### **BSCI 100A. Algebra I — (3 Units)**

*Prerequisite: High school algebra or MATH 165-General Mathematics.*

This course is for those who have some general mathematics skills and want to move on to algebra. Topics include real number systems, linear equations and inequalities in one and two variables, system of linear equations, exponents and polynomials, and factoring.

### **BSCI 100B. Algebra II — (3 Units)**

*Prerequisite: BSCI 100A Algebra I or equivalent.*

This course is the continuation of BSCI 100A and for those who want to further study algebra. Topics include system of linear equations, exponents and polynomials, factoring, rational expressions, roots and radicals, and quadratic equations. The first part of the course overlaps with BSCI 100A so students who have some algebra can take this course directly.

### **BSCI 100C. Pre-Calculus — (3 Units)**

*Prerequisite: BSCI 100B Algebra II or equivalent*

Topics include the fundamentals of trigonometry and the trigonometric functions, trigonometric identities and equations, application to vectors, and sequences and probability.

### **BSCI 206. Physics I Mechanics — (4 Units: 3 guided instruction/1 lab)**

*Prerequisite: BSCI 102 Calculus II (3 Units)*

BSCI 206 Physics I (Mechanics) covers fundamentals of Newtonian Mechanics and the physics of fluids, oscillations (including mechanical waves and sound), and addresses topics of heat and thermodynamics.

## **General Education (30 Units) continued**

### **BSCI 208. Chemistry I — (4 Units: 3 guided instruction/1 lab).**

*Prerequisites: High school chemistry, BSCI 100B Algebra II.*

This course is a 4 unit general engineering course that is a requirement for all engineering degrees. Chemical principles such as reactivity, stoichiometry, thermo-chemistry, atomic theory including bonding and kinetic theory, and gas laws will be covered.

CyberChem is an electronic learning tool that presents the basic concepts appropriate for a college-level introductory course in chemistry. Chemical principles are presented in a multimedia format using text with animations and videos with accompanying sound, interactive experiments, quizzes, and a problem solver with hints and solutions. The laboratory component of the course is comprised of a variety of simulated lab experiments that are found within CyberChem in a section called CyberLabs.

### **CS 150. Information Acquisition Using the Internet — (3 Units)**

*Prerequisite: None.*

This course examines the history of and how the Internet has evolved in a relatively very short time from a tiny experimental internal network into a vast sophisticated and global system of networks that will probably never stop growing, and has had a significant influence on world society. We will learn about its origin, structure, security issues, and some of the many unique and related diverse technologies that now exist because of this expansive and complex network. Students will study how the Internet has evolved during the last twenty-five years and learn about the many interesting ways we have become dependent and rely on it daily in order to communicate, carry out transactions, exchange information, and efficiently accomplish many important personal and business oriented tasks.

### **CS 200. Fundamental Concepts of Information and Computer Technology — (3 Units)**

*Prerequisite: None.*

This course is an introduction to the fundamentals of computers and a study of their basic logical function as it applies to technical systems. A short history of early computers and the researchers who were responsible for them is presented, including various types of codes that are all based on the binary and other modern numbering systems. The materials will introduce the student to various computer concepts and circuits, the central processing unit (CPU), and memory units. The student is introduced to logic gates, Boolean theory, and other numbering systems including binary, quaternary, octal, and hexadecimal. The CPU is further examined to illustrate the use of registers, program counter, and stack pointer. Assembly language programming is introduced and shows the relationship between it and machine code.

### **ENGL 120A. Communication: Composition and Comprehension — (3 Units)**

*Prerequisites: Approval of instructor.*

Expository writing for students who have not completed a freshman writing course elsewhere. Emphasis is on content and form and the ability to express ideas in writing in an organized manner with logical reasoning and support. Students will be assisted in developing a sense of style. Includes analysis of varieties of academic prose and writing a minimum of five formal papers (4-5 pages each).

### **ENGL 120B. Literature: Introduction To Short Fiction — (3 Units)**

*Prerequisite: Satisfactory completion of English 120A Communication: Composition and Comprehension or its equivalent.*

Introduction to techniques and forms of prose narrative. Analysis of representative short and longer narratives and elements of plot, characterization, setting, theme and narrative voice. Critical writing is an integral part of course. Students will write a minimum of 3 formal papers (3-5 pages each).

## General Education (30 Units) continued

### **HIST 120A. Survey of U.S. History: 18th and 19th Centuries — (3 Units)**

*Prerequisite: None.*

This is an introduction and broad survey of United States History from its colonial beginnings to the late 19th century. Political, social, and economic issues and their complex interrelationships will be the focus of the course. Differing historical interpretations and improving writing and basic research skills will be emphasized.

### **HIST 120B. Survey of U.S. History in the Twentieth Century — (3 Units)**

*Prerequisite: General Education requirements or permission of your professor.*

This is an introduction and broad survey of U.S. History from the late 19th century to the present. Political, social, and economic issues and their complex interrelationships will be the core focus of this course. The scientific and technological revolutions of the late 19th and 20th centuries and their possible implications for the 21st century will be included. Final chapters of the course cover the 21st century and current events. Differing historical interpretations and improvement of writing and basic research skills will be emphasized.

### **HIST 120C. Introduction to Western Civilization I — (3 Units)**

*Prerequisite: None.*

Teaches historically the significant elements in the Western heritage starting with prehistoric hominoids, the earliest Near Eastern Civilizations, and the classical Greco-Roman and continues throughout the 17th Century AD Age of Absolute Monarchies. This course is designed to further undergraduate students' general education by introducing them to the ideas, attributes, and institutions that are the foundations of Western Civilization. Whenever possible an interdisciplinary approach using the arts, literature, the other social sciences, including archeology will be encouraged.

### **HIST 120D. Introduction to Western Civilization II — (3 Units)**

*Prerequisite: None.*

Teaches historically the significant elements in the Western heritage from the Age of Absolute Monarchies to the present. This course is designed to further the undergraduate students' general education by introducing them to the ideas, attributes, and institutions that are the bases of Western Civilization. The major cycles of Western and World history in their interactions, especially in the 19th and 20th centuries will be emphasized. Whenever possible an interdisciplinary approach using the arts, literature, and the other social sciences will be stressed.

## Extension Course Enrollment

Students may enroll in Extension courses if they are not seeking a Degree Program. Extension students are charged a non-refundable application fee of \$25 for up to two courses during one trimester.

Extension courses are **\$300 per unit** for undergraduate courses and **\$330 per unit** for graduate courses, plus textbooks and shipping costs. The payment plan option is not available for extension students. Tuition must be paid in full upon enrollment.

**NOTE: Overdue payments are charged a late fee of 1.5% per month of the outstanding balance.** A student withdrawing from CNU or dropping a course may only be assessed a one-time "registration fee" of either \$75 or 20% of the tuition charge per course (not to exceed \$200 per degree program).

## **Human Resources Certificate Program**

Students may enroll in a Human Resources Certificate Program. Certificate Program students are charged a non-refundable application fee of \$75 and a certificate completion fee of \$150.

**Certificate program courses are \$900.00 per course, plus textbooks and shipping costs.**

The payment plan option is not available for certificate program students.

**NOTE: Overdue payments are charged a late fee of 1.5% per month of the outstanding balance.**

### **CERTIFICATE LISTINGS**

#### **Certificate Program in Human Resources Management**

The Certificate Program in Human Resources Management is designed to provide participants with the necessary background essential to meeting the needs of the corporate HR department in the 21st century. Participation is appropriate for both newcomers to the human resources field and those with some experience but who are seeking to keep current in the field or expand their knowledge base.

##### **Program Features:**

- Two Programs:
  - Practitioner Track (Introductory) 6 Courses (18 units)
  - Professional Track (Intermediate) 6 Courses (18 units)
- Does not require a degree for admission to the Practitioner track.
- Those who have a Bachelor's Degree, and have completed the Professional Track and who meet admissions standards can apply for the MASTER OF HUMAN RESOURCES DEGREE. Upon acceptance, transfer credit from the certificate program can be transferred into the degree program.

##### **PRACTITIONER TRACK**

Certificate Program in Human Resources Management

Practitioner Track (Introductory) 6 Courses (18 units)

15-week courses

##### **PRACTITIONER TRACK**

The Practitioner Track is intended for candidates who do not currently hold a Bachelor's degree. Credits taken toward the Certificate Program may be credited toward a Bachelor's degree at a later time.

The Certificate Program in Human Resources Management is designed to provide participants with the necessary background essential to meeting the needs of the corporate HR department in the 21st century. Participation is appropriate for both newcomers to the human resources field and those with some experience but who are seeking to keep current in the field or expand their knowledge base.

Program Features:

**\*\*Does not require a degree for admission to the Practitioner track.**

## **REQUIRED COURSES (12 UNITS)**

### **HRM 305. Key Factors of Human Resources Management — (3 Units)**

***Prerequisite: MGT 301 Management Theory Practice.***

Studies the key factors of human resource management within the organization including recruiting, selecting, training, developing employees, wage administration and union relations.

### **HRM 315. Employment Practices & the Law — (3 Units)**

***Prerequisite: BLAW 201 Business Law, BCOM 301 Fundamentals of Business Communications, MKT 301 Introduction to Marketing, HRM 305 Human Resources Management, BLAW 305 Business Ethics.***

Employment Practices and the Law primarily involve a study of the procuring and orienting of individuals to organizations. Evaluates recruiting, selection, induction, and follow-up methods in light of current legislation. The staffing function of the resource aspects of a management position. All aspects of the legal environment in which Human Resources management must conform to including Civil Rights legislation, Equal Employment Opportunity (EEO), Equal Pay Act, sexual harassment, and the American with Disabilities Act (ADA) are covered in the course.

### **HRM 317. Creating Training & Development Programs — (3 Units)**

***Prerequisite: HRM 315 Employment Practices & the Law.***

How to develop successful training programs which reinforce the company's mission and goals. The course examines the design, operation, and evaluation of training and development activities in organizations. Reviews the legal forces influencing training in organizations.

### **HRM 391. Compensation and Benefits — (3 Units)**

***Prerequisites: HRM 305 Key Factors of Human Resources Management***

This course focuses on the effective management of employee compensation and benefits in contemporary organizations. The course includes emerging issues in compensation administration. Here, compensation is studied from the organization's perspective rather than from the view of the individual employee or society. The content of the course applies to organizations large and small, in the public and private sectors. Terminology may be adapted, but the theories, processes and techniques of good compensation decision-making remain stable across various types of organizations.

The goals of compensation administration are to design compensation systems that elicit desired employee behaviors at work; to motivate employees to join, stay and perform at high levels; and for the organization to remain ethical and legal in its compensation programs. This course provides an overview of how an organization is to accomplish these purposes.

## **ELECTIVES COURSES (6 UNITS) SELECT ANY TWO:**

### **HRM 318. Human Resources Appraisal & Reward Strategies — (3 Units)**

***Prerequisite: HRM 315 Employment Practices & the Law.***

Strategic and ethical considerations in appraising and rewarding people at work. Exploration of various appraisal and compensation systems. Examination of legal and other environmental factors influencing appraisal and compensation activities.

### **HRM 320. Labor & Management Relations — (3 Units)**

***Prerequisite: HRM 315 Employment Practices & the Law.***

Dynamics of labor-management relations, with an emphasis on the significance of dealing with unions and the realities of the constraints industrial relations place on the managerial decision-making process. Topics include the development of unions, union recognition, Collective Bargaining and its impact on wages, hours, working conditions, grievance procedures, and health and safety. Cases from the National Labor Relations Hearing and Administrative Review Boards will also be studied and analyzed.

### **HRM 392. Global Human Resources Management — (3 Units)**

***Prerequisites: HRM 305 Key Factors of Human Resources Management; HRM 315 Employment Practices and the Law; HRM 391 Compensation and Benefits***

This course introduces global issues in managing Human Resources, including cultural, legal and local market pressures on HRM functions. The course compares domestic operations with the complexities of managing an international workforce.

### **HRM 393. Organization Development and Change Management — (3 Units)**

***Prerequisites: The student is expected to have a basic understanding of management foundations, to be familiar with the case study method, and to have basic presentation skills.***

The course deals with planned change efforts in organizations, covering organizational design; structure; principles of organizations; human resources training; intra-and inter-departmental communications; coordination activities; and leadership growth and development. The course considers Organizational Development and change management at the individual, team (group), and organizational levels.

### **HRM 394. Human Resources Information Systems — (3 Units)**

***Prerequisites: HRM 305 Key Factors of Human Resources Management; HRM 315 Employment Practices and the Law***

Studies the development and application of information systems to the management of human resources. Includes systems for payroll, skills inventories, succession planning, labor contract negotiations and administration, and other systems.

### **HRM 395. Strategic Human Resources Planning — (3 Units)**

***Prerequisite: None***

This course presents a comprehensive organization application which focus on planning for effective utilization of human resources. Topics include: strategic planning in staffing, reduction of labor surplus, labor shortage avoidance and uses of alternative measures in staffing issues. Human resources information systems will focus on the research and range and uses of the current computer applications systems. Employee protections and affirmative action plans will be addressed through understanding of the laws, the labor population and legal applications research. Management succession will be related to performance systems and employee development planning.

*\*\*CNU may limit the period for credit applicability to seven years or some other fixed time period.*

### Tuition & Fees

Students may enroll in a Human Resources Certificate Program. Certificate Program students are charged a non-refundable application fee of \$75 and a certificate completion fee of \$150. Certificate program courses are \$310 per unit plus textbooks and shipping costs. The payment plan option is not available for certificate program students

Books/Shipping: Books and materials are the responsibility of the students. Their cost will vary according to course requirements. Shipping is additional. Access to computer, Internet and email is required.

The Practitioner Track is intended for candidates who do not currently hold a Bachelor's degree. Credits taken toward the Certificate Program may be credited toward a Bachelor's degree at a later time.

**NOTES:** \*CNU may limit the period of credit applicability to seven years, or some other fixed time period.

## **Certificate Program in Human Resources Management**

### **PROFESSIONAL TRACK**

**Professional Track (Introductory) 6 Courses (18 units)**

**15-week courses**

### **PROFESSIONAL TRACK**

The Professional Track is intended for candidates who currently hold a Bachelor's degree. Credits toward the Certificate Program which are taken at the 500 level may be credited toward a Master's degree at a later time.

The Certificate Program in Human Resources Management is designed to provide participants with the necessary background essential to meeting the needs of the corporate HR department in the 21st century. Participation is appropriate for both newcomers to the human resources field and those with some experience but who are seeking to keep current in the field or expand their knowledge base.

### **REQUIRED COURSES (12 UNITS)**

#### **HRM 450. Human Resources Management Processes — (3 Units)**

***Prerequisite: HRM 430 The Managerial Process.***

Studies human resources within the organization including recruiting, selection, training, development, evaluating performance, compensation, and union relations, all within relevant legal constraints.

#### **HRM 503. Employment & Labor Law — (3 Units)**

***Prerequisite: HRM 450 Human Resources Management Processes.***

Analyzes the application of current statutory and case law and administrative agency regulations related to EEO, Affirmative Action, labor relations, occupational safety and health, compensation issues, Americans with Disabilities Act, and other fair employment practices.

#### **HRM 540. Compensation Design & Administration — (3 Units)**

***Prerequisites: HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law***

This course focuses on the effective management of employee compensation and benefits in contemporary organizations. The course includes emerging issues in compensation. Compensation is studied from the organization's perspective rather than from the view of the individual employee or society. The content of the course applies to organizations large and small, public and private. Terminology may be adapted but the

theories/processes of good compensation decision-making remain stable across various types of organizations. The goals of compensation administration are to design pay systems that elicit desired employee behaviors at work; to motivate employees to join, stay and perform at high levels; and for the organization to remain ethical and legal in its compensation programs. This course provides an overview of how an organization is to accomplish these purposes.

**HRM 560. Cost Effective Human Resources Development — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 501 Ethics & Social Responsibility, HRM 503 Employment & Labor Law.*

This course will discuss strategic and financial considerations in training and development. It will address the design of training operations, program development, and ethicality and cost effectiveness of human resource programs. The relationship of cultural diversity and work-force forecasting to budgets and financial planning will be explored.

**ELECTIVES COURSES (6 UNITS) SELECT ANY TWO:**

**HRM 402. Organizational Development and Transformation — (3 Units)**

*Prerequisite: MGT 301 Management Theory & Practice.*

Analysis of the Organizational Process and study of contemporary theories for implementing change within the organization. Examples, issues and challenges of Organization Development and Organizational Transformation will be considered. Theory is merged with practice through integration of assignments with the student's current position.

**HRM 508. Strategic Human Resources Planning — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 501 Ethics & Social Responsibility, HRM 503 Employment & Labor Law.*

Planning for effective utilization of human resources in organizations is explored. Topics include: human resources strategic planning, human resources information systems, employee protection, affirmative action, management succession and development planning and human resources-needs forecasting.

**HRM 510. International Human Resources Management — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law.*

This course examines global issues in managing human resources, including cultural, legal, and local market pressures on HRM functions, and compares domestic operations with the complexities of managing an international workforce. This course will examine international human resources management, particularly firm-level human resources strategies in the international competitive environment. The relationships between the external environment, organizational factors, and international human resources management strategies and practices will be studied from both theoretical and practical perspectives. The subject will include topics such as strategic issues for international human resources management, human resources management in a variety of international organizational forms, cross-cultural issues, and expatriate management.

**HRM 520. Human Resources Information Systems — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law*

Studies the development and application of information systems to the management of human resources. Includes systems for payroll, skills inventories, succession planning, labor contract negotiations and administration, and other systems.

**HRM 530. Labor Relations: Process & Law — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law*

A study of the practice of labor relations including the organizing process, collective bargaining, labor contract administration, union structure and issues, and the influence of external labor market factors on labor relations.

**HRM 550. Performance Appraisal Systems — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 501 Ethics & Social Responsibility, HRM 503 Employment & Labor Law.*

Various systems used to evaluate employee productivity and performances are examined. Topics include: job analysis, job descriptions, setting performance standards, designing appraisal feedback and administering performance appraisal systems.

The course explores a variety of approaches to evaluating employee performance. Both traditional and non-traditional methods will be examined. The course is aimed at providing you with practical, proven hands-on methods for evaluating performance. In addition, key research in the area will be explored with the intent of laying a strong foundation for quality evaluation systems. The course covers some of the important legal issues relevant to performance appraisal. Finally, The course also exposes the student to some arguments that have been made for doing away with performance evaluation altogether. Both the pros and cons of the issue will be examined.

*\*\*CNU may limit the period for credit applicability to seven years or some other fixed time period.*

**Tuition & Fees**

Students may enroll in a Human Resources Certificate Program. Certificate Program students are charged a non-refundable application fee of \$75 and a certificate completion fee of \$150. Certificate program courses are \$310 per unit plus textbooks and shipping costs. The payment plan option is not available for certificate program students

*Books/Shipping: Books and materials are the responsibility of the students. Their cost will vary according to course requirements. Shipping is additional. Access to computer, Internet and email is required.*

**Certificate Program in Human Resources Management**

**PRACTITIONER CORE COURSES:**

**HRM 305. Key Factors of Human Resources Management — (3 Units)**

*Prerequisite: MGT 301 Management Theory Practice.*

Studies the key factors of human resource management within the organization including recruiting, selecting, training, developing employees, wage administration and union relations.

### **HRM 315. Employment Practices & the Law — (3 Units)**

*Prerequisite: BLAW 201 Business Law, BCOM 301 Fundamentals of Business Communications, MKT 301 Introduction to Marketing, HRM 305 Human Resources Management, BLAW 305 Business Ethics.*

Employment Practices and the Law primarily involve a study of the procuring and orienting of individuals to organizations. Evaluates recruiting, selection, induction, and follow-up methods in light of current legislation. The staffing function of the resource aspects of a management position. All aspects of the legal environment in which Human Resources management must conform to including Civil Rights legislation, Equal Employment Opportunity (EEO), Equal Pay Act, sexual harassment, and the American with Disabilities Act (ADA) are covered in the course.

### **HRM 317. Creating Training & Development Programs — (3 Units)**

*Prerequisite: HRM 315 Employment Practices & the Law.*

How to develop successful training programs which reinforce the company's mission and goals. The course examines the design, operation, and evaluation of training and development activities in organizations. Reviews the legal forces influencing training in organizations.

### **HRM 391. Compensation and Benefits — (3 Units)**

*Prerequisites: HRM 305 Key Factors of Human Resources Management*

This course focuses on the effective management of employee compensation and benefits in contemporary organizations. The course includes emerging issues in compensation administration. Here, compensation is studied from the organization's perspective rather than from the view of the individual employee or society. The content of the course applies to organizations large and small, in the public and private sectors. Terminology may be adapted, but the theories, processes and techniques of good compensation decision-making remain stable across various types of organizations.

The goals of compensation administration are to design compensation systems that elicit desired employee behaviors at work; to motivate employees to join, stay and perform at high levels; and for the organization to remain ethical and legal in its compensation programs. This course provides an overview of how an organization is to accomplish these purposes.

### **HRM 392. Global Human Resources Management — (3 Units)**

*Prerequisites: HRM 305 Key Factors of Human Resources Management; HRM 315 Employment Practices and the Law; HRM 391 Compensation and Benefits*

This course introduces global issues in managing Human Resources, including cultural, legal and local market pressures on HRM functions. The course compares domestic operations with the complexities of managing an international workforce.

## **PRACTITIONER ELECTIVE COURSES**

### **HRM 318. Human Resources Appraisal & Reward Strategies — (3 Units)**

*Prerequisite: HRM 315 Employment Practices & the Law.*

Strategic and ethical considerations in appraising and rewarding people at work. Exploration of various appraisal and compensation systems. Examination of legal and other environmental factors influencing appraisal and compensation activities.

### **HRM 320. Labor & Management Relations — (3 Units)**

*Prerequisite: HRM 315 Employment Practices & the Law.*

Dynamics of labor-management relations, with an emphasis on the significance of dealing with unions and the realities of the constraints industrial relations place on the managerial decision-making process. Topics include the development of unions, union recognition, Collective Bargaining and its impact on wages, hours, working conditions, grievance procedures, and health and safety. Cases from the National Labor Relations Hearing and Administrative Review Boards will also be studied and analyzed.

**HRM 392. Global Human Resources Management — (3 Units)**

*Prerequisites: HRM 305 Key Factors of Human Resources Management; HRM 315 Employment Practices and the Law; HRM 391 Compensation and Benefits*

This course introduces global issues in managing Human Resources, including cultural, legal and local market pressures on HRM functions. The course compares domestic operations with the complexities of managing an international workforce.

**HRM 393. Organization Development and Change Management — (3 Units)**

*Prerequisites: The student is expected to have a basic understanding of management foundations, to be familiar with the case study method, and to have basic presentation skills.*

The course deals with planned change efforts in organizations, covering organizational design; structure; principles of organizations; human resources training; intra-and inter-departmental communications; coordination activities; and leadership growth and development. The course considers Organizational Development and change management at the individual, team (group), and organizational levels.

**HRM 394. Human Resources Information Systems — (3 Units)**

*Prerequisites: HRM 305 Key Factors of Human Resources Management; HRM 315 Employment Practices and the Law*

Studies the development and application of information systems to the management of human resources. Includes systems for payroll, skills inventories, succession planning, labor contract negotiations and administration, and other systems.

**HRM 395. Strategic Human Resources Planning — (3 Units)**

*Prerequisite: None*

This course presents a comprehensive organization application which focus on planning for effective utilization of human resources. Topics include: strategic planning in staffing, reduction of labor surplus, labor shortage avoidance and uses of alternative measures in staffing issues. Human resources information systems will focus on the research and range and uses of the current computer applications systems. Employee protections and affirmative action plans will be addressed through understanding of the laws, the labor population and legal applications research. Management succession will be related to performance systems and employee development planning.

## **Six Sigma Certificate Program**

### **Six Sigma Green Belt**

Students may enroll in CNU's Six Sigma Green Belt Certificate Program. Certificate Program students are charged a non-refundable application fee of \$75. Total Cost for the Six Sigma Green Belt Certificate program is \$1285.00 which includes the cost of the certificate completion fee. Textbooks and shipping costs are not included. The payment plan option is not available for certificate program students.

### **Six Sigma Black Belt**

Students may enroll in CNU's Six Sigma Black Belt Certificate Program. Certificate Program students are charged a non-refundable application fee of \$75. Total Cost for the Six Sigma Black Belt Certificate program is \$1985.00, which includes the cost of the certificate completion fee. Textbooks and shipping costs are not included. The payment plan option is not available for certificate program students.

## **Six Sigma Green Belt Certificate Program**

CNU's Six Sigma program focuses on the necessary tools most commonly used by business professionals everywhere.

### **Program Candidates**

California National University Six Sigma Green Belt (SSGB) Certificate Program follows the DMAIC model (Define- Measure - Analyze - Improve – Control) and teaches the skills businesses rely on to lead projects effectively. The course consists 6 weeks of self-paced computer-based training (CBT) courses. **Length of course: 6 weeks self-paced, online.**

### **Program Overview**

The Six Sigma Green Belt Certificate Program is a for credit certification offered by California National University. The course is prepared with applied exercises and real-world case studies for a unique learning experience. Because CNU's program is self-paced (CBT) online, students can participate as long as he/she has a connection to the Internet.

### **Program Length**

6-Weeks Self-Paced - Computer Based Training (CBT)

### **Green Belt Certification**

CNU offers a Certificate after the student completes all required assignments and passes the final exam.

### **Tuition & Fees**

Students may enroll in the Six Sigma Green Belt Certificate Program. Certificate Program students are charged a non-refundable application fee of \$75. Total Cost for the Six Sigma Green Belt Certificate program is \$1285.00, which includes the cost of the certificate completion fee. Textbooks and shipping costs are not included. The payment plan option is not available for certificate program students.

For more information detailing the Six Sigma Certificate Program, please call our toll-free number: (800) 782-2422 or email [cnuadms@mail.cnuas.edu](mailto:cnuadms@mail.cnuas.edu).

## **Six Sigma Black Belt Certificate Program**

### **Prerequisites for this Course:**

At least one year working in Quality Improvements or with Six Sigma projects and Six Sigma Green Belt Certificate.

### **Course Description:**

This course provides a review of the basic statistical methods, focusing on quality and continuous improvement and six sigma methods in all aspects of business operation including Critical to Quality (CTQ), and DMAIC Methodology. A review of project management and measurement analysis is emphasized. This course follows the body of knowledge suggested by the American Society of Quality to be reviewed and studied as a preparation for the certification as six-sigma black belt.

### **The Goals of This Course:**

This course supports the following outcomes for the certification as Black Belt

- An ability to link project management and the six sigma tools
- An ability to acquire and analyze data using appropriate statistical methods to facilitate data analysis.
- An ability to apply modern problem solving tools and techniques necessary for quality tracking and improvement
- An ability to manage relations with customers and suppliers
- An ability to communicate effectively using statistical concepts

### **What You Will Learn To Do:**

- Recognize the importance of Six Sigma tools on the global competition
- Understand the concepts of Repeatability & Reproducibility methodology
- Identify the customers' needs and communicate with them.
- Enhance leadership and understand the support of senior management in the deployment of six sigma
- Work in teams to execute processes efficiently and effectively
- Understand the role of communication in Six Sigma
- Use problem solving as an aid in decision making
- Understand Quality Function Deployment as a tool of six sigma
- Optimize processes using Statistical Process Control (SPC) and Designed of Experiments (DOE)
- Identify improvement needs and constraints

#### **Tuition & Fees**

Students may enroll in a CNU's Six Sigma Black Belt Certificate Program.

Certificate Program students are charged a non-refundable application fee of \$75.

**Total Cost for the Six Sigma Black Belt Certificate program is \$1985.00, which includes the cost of the certificate completion fee. Textbooks and shipping costs are not included.**

The payment plan option is not available for certificate program students.

# **QAS 501 Six Sigma Green & Black Belt Combination Certificate Program**

## **Prerequisites for this Course:**

At least one year working in Quality Improvements or with Six Sigma projects and Algebra I or equivalent. California National University (CNU) Six Sigma Green and Six Sigma Black Belt Certificate program allows professionals to pursue an educational focus in Six Sigma techniques. Earn both certificates in 15 weeks. The program is open to engineering, technical and business professionals conveniently over the Internet. Classes start every Friday!

Six Sigma is a strategic approach to implementing quality, process, and business improvement through the use of statistical and other analytic tools applied to problems that have meaningful impact on key business results. Upon completion of the program, students will be awarded a Six Sigma Green Belt Certificate, Six Sigma Black Belt, possessing all of the requirements for Certificate as a Six Sigma Green Belt and Six Sigma Black Belt. The student will also receive one official transcript.

## **How to apply?**

To apply for the Six Sigma Combined Green and Black Belt Certificate follow these simple steps:

- Make sure to select “Six Sigma Combined Certificate” on the CNU website at [www.cnuas.edu](http://www.cnuas.edu) download the application.
- Download, print and complete the application.
- Fax the completed application to 818-830-2418 Attention Admissions.

## **Tuition and Fees (Credit)**

All students pay the same tuition and fees for this 3 unit course.

<b>College Credit:</b>	3 Units
<b>Application Fee:</b>	\$75.00
<b>Course Tuition:</b>	\$2900.00

*(Includes both certificates for the Six Sigma Green Belt and the Six Sigma Black Belt, and Transcript. Textbooks not included)*

## **Course Description:**

This course provides a review of the basic statistical methods, focusing on quality and continuous improvement and six sigma methods in all aspects of business operation including Critical to Quality (CTQ), and DMAIC Methodology. Case studies and review questions will be used to illustrate major concepts. This course follows the body of knowledge suggested by the American Society for Quality to be reviewed and studied as a preparation for the Certificate as a Six Sigma practitioner.

## **The Goals of This Course:**

- Assure the understanding of the Six Sigma concepts.
- Facilitate the implementation of Six Sigma methods to business problems.
- Sell the Sigma concepts to management to make process improvements the first priority of their business.
- Understand the concepts discussed in the body of knowledge, which is required in the pursuit of the Green or Black Belt Certificate.

### **What You Will Learn To Do:**

- Recognize the importance of Six Sigma tools on the global competition
- Identify the customers' needs and communicate with them.
- Enhance leadership and understand the support of senior management in the deployment of Six Sigma.
- Work in teams to execute processes efficiently and effectively
- Understand the role of communication in Six Sigma
- Definitions of the tools of quality and the Six Sigma methods
- Use problem solving as an aid in decision making
- Understand Quality Function Deployment as a tool of six sigma
- Optimize processes using Statistical Process Control (SPC) and Designed of Experiments (DOE)
- Identify improvement needs and constraints

## **Degree Course Listings**

### **COLLEGE OF ENGINEERING**

- Bachelor of Science in Engineering
- Bachelor of Computer Science
- Master of Science in Engineering

### **COLLEGE OF QUALITY AND ENGINEERING MANAGEMENT**

- Bachelor of Quality Assurance Science
- Master of Engineering Management

### **COLLEGE OF BUSINESS ADMINISTRATION**

- Bachelor of Science in Business Administration
- Master of Business Administration
- Master of Human Resources Management

### **ELECTIVE AREAS**

- Accounting
- Business Law
- Computer Engineering
- Computer Science
- Economics
- Electrical Engineering
- Environmental Engineering
- Finance
- Health Care Management
- Human Resources Management
- International Business Administration
- Management
- Management Information Systems
- Management Science
- Marketing
- Mechanical Engineering
- Quality Assurance Science

## **Bachelor of Science in Engineering Degree Program**

The engineering programs at the undergraduate and graduate levels are designed to prepare students for rewarding careers in these fields. Graduates are expected to possess sufficient knowledge to achieve professional certification (e.g., registration as a Professional Engineer), if they choose to do so. Expected outcomes for each degree program are based on guidelines established by professional organizations such as the *Accreditation Board for Engineering and Technology* (ABET).

### **Bachelor of Science in Engineering Program Objectives:**

The **BSE** program objective is to provide a general engineering program designed for working adults interested in technical career advancement. Courses in several elective areas are provided to allow for in-depth study of topics related to a student's technical field of choice, i.e., mechanical, electrical, environmental, computer science, computer engineering, or quality.

### **BSE Program Learning Outcomes:**

- An ability to apply knowledge of mathematics, science and engineering.
- A recognition of the importance of experimentation in engineering, as well as the ability to analyze and interpret data.
- An ability to design a system, component, or process to meet desired needs.
- An ability to identify, formulate, and solve engineering problems.
- An ability to use the techniques, skills and modern engineering tools necessary for ethical engineering practice.
- A knowledge of basic sciences, including chemistry and physics.
- A knowledge of engineering mathematics, including multivariate calculus, differential equations, statistics, and linear algebra.
- An ability to communicate effectively.

### **BACHELOR OF SCIENCE IN ENGINEERING DEGREE PROGRAM WITH A FOCUS IN MECHANICAL, ELECTRICAL, COMPUTER SCIENCE, COMPUTER ENGINEERING, ENVIRONMENTAL, OR QUALITY ASSURANCE SCIENCE ENGINEERING REQUIREMENTS**

High School Diploma or GED equivalent is required for admission. Applicants to CNU's Bachelor of Science in Engineering degree program are expected to have a background in algebra, physics, plane geometry, trigonometry and chemistry. If an applicant lacks this background, prerequisite courses will be assigned from the CNU Basic Science curriculum. Students who have not taken Calculus I will be required to take a math placement test.

The Bachelor of Science in Engineering degree program requires satisfactory completion of a minimum of 126 units of academic work with a cumulative GPA of 2.0 or better in the following areas:

General Education	30 units (Lower division)
Basic Sciences	33 units (Lower division)
General Engineering	30 units (Lower/Upper division)
Engineering Electives	30 units (Upper division)
Capstone Project	3 units (Upper division)
<b>TOTAL</b>	<b>126 units</b>

Courses are offered in a systematic manner, i.e., where applicable, prerequisites will be completed before the student can enroll in subsequent high-level offerings. General Education and Engineering Electives requirements are described in the following paragraphs.

**General Education:** 30 units (Lower division)

Students pursuing a Bachelor of Science in Engineering degree must complete a breadth requirement of 30 General Education units. Students may elect to take the College-Level Examination Program (CLEP) exams to meet this requirement instead or in combination with courses. Credit given for General Education courses taken through CLEP exams is based on passing scores as determined according to the range of acceptable scores established by the American Council on Education (ACE). Students have the option to fulfill general education requirements by choosing courses related to the subject areas listed below:

- Communications (written/oral)
- Computation (quantitative reasoning/concepts)
- Social Science (history, sociology, economics, and politics)
- Computer Technology & Practice
- Humanities (literature, philosophy, language, culture, the arts)
- Life/Physical Sciences

**Engineering Electives** – 30 Units (Upper division)

Students pursuing a Bachelor of Science in Engineering degree **with A Focus In Mechanical, Electrical, Computer Science, Computer Engineering, Environmental, Or Quality Assurance Science Engineering Requirements** must complete a breadth requirement of 30 Engineering Elective units from these six elective areas:

**Mechanical, Electrical, Computer Science, Computer Engineering, Environmental, Or Quality Assurance Science Engineering.**

**Computer Engineering**

Computer engineering has now come of age. For a quarter of a century it has grown into an area of study quite apart from its initial position as a sub-discipline of electrical engineering. Even within computer engineering, the state of the art is rapidly changing. A working professional has to keep abreast of technological innovations and discoveries to perform effectively in today's marketplace. This curriculum is continuously updated to bring in the latest advancements covered in its vast span.

**Computer Engineering**

**CE 303. Linear Systems (Discrete) — (3 units)**

***Prerequisite: EE 309 Linear Systems (Continuous).***

Analysis of discrete systems with discrete inputs, Z-transform and Fourier analysis, convolution and state variable techniques.

**CE 420. Digital Circuit Design — (4 units: 3 guided instruction/1 lab)**

***Prerequisites: EE 309 Linear Systems (Continuous), EE 310 Electronics I.***

Non-linear devices and their input-output relationships, design of memory elements and logic gates, design techniques, e.g. TTL, PMOS, CMOS, DTL, etc., introduction to VLSI.

**CE 430. Computer Design — (3 units)**

***Prerequisite: ENGR 307 Introduction to Logic Design.***

General-purpose digital computers, hardware modules, control and arithmetic units, computer organization, and introduction to fault analysis.

### **CE 440. Microprocessor Systems Design — (4 units: 3 guided instruction/1 lab)**

***Prerequisite: ENGR 307 Introduction to Logic Design.***

Introduction to the architecture, hardware, and software of a variety of microprocessors, including advanced RISC microprocessors. Major emphasis is a design project. The course will present microprocessor architecture, memory hierarchy, and pipelining. The Intel 80X86 and Motorola 68000 processors will be covered with emphasis on addressing modes and instruction sets. Various RISC processors will also be covered.

### **Computer Science**

This Bachelor's program deepens a student's understanding of the field of computing, allowing the graduate to apply his/her knowledge to specific, constrained problems and thereby to produce solutions. The introductory courses provide strong foundation and allow the student to function effectively in a field that has an unusually high rate of change in its technology and a relatively gradual rate of growth in its theory. Finally, the program provides an environment in which the student is able to maintain currency with recent technological and theoretical developments.

### **CS 150. Information Acquisition Using the Internet — (3 units)**

***Prerequisite: None.***

This course examines the history of and how the Internet has evolved in a relatively very short time from a tiny experimental internal network into a vast sophisticated and global system of networks that will probably never stop growing, and has had a significant influence on world society. We will learn about its origin, structure, security issues, and some of the many unique and related diverse technologies that now exist because of this expansive and complex network. Students will study how the Internet has evolved during the last twenty-five years and learn about the many interesting ways we have become dependent and rely on it daily in order to communicate, carry out transactions, exchange information, and efficiently accomplish many important personal and business oriented tasks.

### **CS 200. Fundamental Concepts of Information and Computer Technology — (3 units)**

***Prerequisite: None.***

This course is an introduction to the fundamentals of computers and a study of their basic logical function as it applies to technical systems. A short history of early computers and the researchers who were responsible for them is presented, including various types of codes that are all based on the binary and other modern numbering systems. The materials will introduce the student to various computer concepts and circuits, the central processing unit (CPU), and memory units. The student is introduced to logic gates, Boolean theory, and other numbering systems including binary, quaternary, octal, and hexadecimal. The CPU is further examined to illustrate the use of registers, program counter, and stack pointer. Assembly language programming is introduced and shows the relationship between it and machine code.

### **CS 201. Introduction to Algorithms and Programming — (3 units: 2 guided instruction/1 lab)**

***Prerequisite: CS 200 Fundamental Concepts of Information and Computer Technology or consent of professor.***

Introduction to the discipline of computer science using a high level language. Provides an overview to the programming process and program design techniques. Topics include algorithm development, control structures, procedures, and elementary data structures. Methodologies for program design, development, style, testing and documentation are also included.

### **CS 202B. Programming in Visual Basic — (3 units)**

***Prerequisite: CS 201 Introduction to Algorithms and Programming.***

Syntax, control and data structures of the Visual Basic language are covered. Features such as arrays, functions, and loops are presented throughout various programming assignments. Graphics, error handling, debugging and sequential file handling will also be covered.

### **CS 202C. Computer Programming in C — (3 units)**

***Prerequisite: CS 201 Introduction to Algorithms and Programming.***

Syntax, control and data structures of the C language are covered. Critical features of the language including arrays, functions, pointers, structures and files are presented throughout various programming assignments.

### **CS 202J. Introduction to HTML and Java — (3 units)**

***Prerequisites: Since this is an introductory course in HTML and Java, there are very few formal prerequisites. It is beneficial for the student to have had some basic experience in programming languages and in using the Internet before taking this course, but everything needed is provided here for pure beginners as well.***

This course serves as a general introduction to Web page design using HTML and Java at a high level. Topics discussed include the purposes and capabilities of HTML and Java (their similarities and differences), fundamental text, image, and table formatting commands, web page linking, and inclusion of Java to achieve interactive Web pages. The student should be able to gain a high-level understanding of the main capabilities of HTML and Java, although only a subset of the available commands are emphasized and examined in this introductory-level course.

### **CS 203. Data Structures and Analysis of Algorithms — (3 units)**

***Prerequisites: CS 201 Introduction to Algorithms and Programming, BSCI 101 Calculus I, BSCI 113 Discrete Mathematics.***

***Suggested Skills: C++, Mathematical Summation and Basic functions.***

You will learn a number of different data structures such as: lists, stacks, queues, and trees. Along with data structures, you will also study a wide range of programming techniques to solve larger and more complex problems.

### **CS 204. Introduction to Computer Architecture — (3 units)**

***Prerequisite: CS 200 Fundamental Concepts of Information and Computer Technology or demonstration of mastery of material.***

In addition, experience with computers is required, and knowledge of how to perform the following tasks:

Navigate around Windows 98/2000/XP, i.e. use scroll bars, resize and position windows.

Download and install programs and other applications or compressed files.

Use of Microsoft Word, PowerPoint Presentations, and Adobe Acrobat reader.

Basic use of and familiarity with PC user hardware and software features.

Functional knowledge of e-mail, Web browsing and conducting an Internet search.

This course serves as a general introduction to computer organization at the systems architectural level. Topics include data representation, processor and data storage technology, systems integration, I/O theory, application development, operating systems, networking, and system administration. The curriculum will emphasize and examine these along with other topics and is intended to provide an understanding of the major components of a computer system for implementation, maintenance and management objectives. This course also discusses the tradeoffs that are associated with implementing and using various design and planning techniques while at the same time meeting typical industry price/performance and many other constraints.

### **CS 205. Computer Systems and Interfaces — (3 units)**

***Prerequisite: CS 204 Introduction to Computer Architecture.***

Extension of basic digital computer topics to a more advanced level. Topics include advanced addressability, virtual memory, cache memory, and multiprocessor. Multi-cache architectures, device management, loaders and linkers, input/output control and techniques for interrupt handling are also included.

### **CS 208. File and Database Systems — (3 units)**

*Prerequisites: CS 204 Introduction to Computer Architecture, CS 205 Computer Systems and Interfaces. Students must have Microsoft Access 2000 or Microsoft Access XP version and know how to create PowerPoint slides.*

An introduction to file systems with an emphasis on organization techniques including sequential, indexed, indexed sequential, direct, inverted and tree structures. An overview of basic database models, including the relational data model. Database topics include data definition languages, data manipulation languages and normalization techniques.

### **CS 209. Principles of Programming Languages — (3 units)**

*Prerequisite: CS 203 Data Structures and Analysis of Algorithms.*

Survey of major developments in programming languages. Introduction to contemporary programming paradigms and their related languages, including procedural, functional, logic, and object-oriented languages (C++). The mechanisms for sequence control, data structure implementation and run-time storage management within each type of language are discussed.

### **CS 302. Programming in Java — (3 units)**

*Prerequisite: CS 202J Introduction to HTML and Java or equivalent*

This language-intensive course builds upon the introductory course to cover the most advanced language features and concepts. The conceptually broad and demanding—but essential—concept of concurrent programming is covered in depth, allowing use within the graphical programming course to develop responsive graphical user interfaces (a primary use of concurrency within Java). Other intricate topics that are vital for industrial-quality code production are also covered. These topics include cloning, inner classes, and using non-Java code from within Java applications to access platform-specific facilities. The course concludes with an examination of how best to express common Design Patterns in Java in order to use the language to produce designs that make use of the design expertise formerly available only to a select few design “gurus”.

### **CS 305. Computer Organization & Assembly Language — (3 units)**

*Prerequisite: CS 202C Computer Programming in C.*

Assembly language of the 80x86 and the Pentium CISC microprocessors. Number systems and number representations. 80x86 architecture and addressing modes. 80x86 instruction set: data transfer, program control, logic, strings, fixed-point binary arithmetic, procedures, and macros. Segments. Registers. Subroutines. Instruction execution timing. Decimal arithmetic. Floating-point arithmetic. 80x87 math coprocessor. Write assembly language programs on an Intel-based Windows PC.

### **CS 306. Introduction to Software Engineering — (3 units)**

*Prerequisites: CS 203 Data Structures and Analysis of Algorithms, CS 205 Computer Systems and Interfaces. It is expected that the student will have experience, either professionally or through coursework, in the programming of computer programs. This implies expertise in using the computer as well as in one or more computer programming languages such as Visual Basic, COBOL, JavaScript, Java or C/C++. Student is also expected to be proficient in utilizing the Internet to perform research.*

Software Engineering is the art and science of building a computer system. Computer systems are collections of computer programs - all having a common theme. Creation of systems is a stepped procedure utilizing a series of procedures and technologies via the SDLC (Systems Development Life Cycle). The student will learn all components of the SDLC including:

How to determine feasibility of a proposed computer system

How to analyze a system's requirements

How to develop a complete technical specification

Translating the specification to program code

Managing the development process

System testing

Implementing the system

Maintaining the system

In addition, the student will learn about the concepts of productivity and quality and measuring the process of software engineering.

### **CS 307. Introduction to Operating Systems — (3 units: 2 guided instruction/1 lab)**

*Prerequisites: CS 202C Computer Programming in C, CS 205 Computer Systems and Interfaces.*

An overview of operating systems including their history and evolution. Examination of typical problems associated with implementing such systems. Topics include multitasking, interrupts, concurrency, deadlock, and scheduling.

### **CS 310. Network Principles — (3 units)**

*Prerequisite: CS 307 Introduction to Operating Systems*

*Students should have a basic knowledge of computer systems, communication protocols and internet researching skills.*

An introduction to the study of computer networks. Current methods and practices in the use of networks are examined. Other topics include physical and architectural elements, information layers, and network tools. Various architectures are compared and contrasted.

This course also examines a variety of network technologies and concepts, including: analog and digital telephony, voice digitization, digital transmission, multiplexing, switching, modulation techniques, synchronization control, network management, fiber-optic systems, mobile systems, ATM, digital subscriber access and traffic analysis.

The focus in this course will be on understanding the underlying concepts and requirements relevant to these technologies, as well as implementation issues and practices.

### **CS 330 Information Security (3 units)**

*Prerequisites: Student should have completed the Basic Sciences courses (BSCI 101-Calculus I; BSCI 102-Calculus II; BSCI 103- Calculus III; BSCI 104-Ordinary Differential Equations; BSCI 105-Probability and Statistics; BSCI 113-Discrete Mathematics; CS 202C-Computer Programming in C; CS 204-Introduction to Computer Architecture; CS 310- Network Principles or permission of your professor.*

A study of the practical approach to information security by focusing on real-world examples. While not sidestepping the theory, the emphasis is on developing the skills and knowledge that security and information technology students and professionals need to face their security challenges.

Cryptography: classic cryptosystems, symmetric key cryptography, public key cryptography, hash functions, random numbers, information hiding, and cryptanalysis

Access control: authentication and authorization, password-based security, ACLs and capabilities, multilevel and multilateral security, covert channels and inference control, BLP and Biba's models, firewalls, and intrusion detection systems

Protocols: simple authentication protocols, session keys, perfect forward secrecy, timestamps, SSL, IPSec, Kerberos, and GSM

Software: flaws and malware, buffer overflows, viruses and worms, software reverse engineering, digital rights management, secure software development, and operating systems security

### **CS 411. Artificial Intelligence — (3 units)**

*Prerequisite: CS 203 Data Structures and Analysis of Algorithms.*

This course presents an introduction to the application of intelligent systems to practical problems. The intelligent systems considered in this course are expert systems, fuzzy systems, neural networks, evolutionary computation, hybrid algorithms, and data mining.

**CS 412. The UNIX Environment for Programmers — (3 units: 2 guided instruction/1 lab)**

***Prerequisite: CS 307 Introduction to Operating Systems.***

This course provides a technical overview of the UNIX operating system, providing hands-on experience with commands and files. Students will explore the basic structure, functions, and tools of the UNIX operating system. Topics include basic UNIX commands, files and directories, text editing, electronic mail, pipes and filters, shell environments, scripting and programming in the UNIX environment.

**CS 413. Programming Languages and Software Methodology (3 units: 2 guided instruction/1 lab)**

***Prerequisite: CS 306 Introduction to Software Engineering.***

This course introduces various fundamental concepts that are generic to essentially all programming languages. Topics include variables, expressions, statements, data types, scope, procedures, exception handling, and concurrency. This course also discusses the various tradeoffs associated with implementing and using these constructs in a language along with an in-depth analysis of the proper methodology by which they should be employed. Laboratory exercises enable you to explore these concepts and methodologies using a language you are familiar with.

**CS 414. Principles of Operating Systems — (3 units)**

***Prerequisites: CS 307 Introduction to Operating Systems, CS 412 The Unix Environment for Programmers.***

An in-depth study of operating system principles, their descriptions, behavior, problems, and design. Concurrent processes, mutual exclusion, cooperation, deadlocks, resource allocation, storage management and protection are covered. Detailed study of specific systems.

**CS 415. Object-Oriented Programming Concepts — (3 units)**

***Prerequisites: CS 202C Computer Programming in C, CS 209 Principles of Programming Languages***  
***Although not a prerequisite for this course, having taken CS 202J Introduction to HTML and Java will be helpful and advantageous.***

This course covers principles of object-oriented design and programming. Topics include the role of objects, classes, methods, message passing, encapsulation, polymorphism, inheritance, and instantiation. Topics are illustrated using an object-oriented language such as Java, C++ or Smalltalk/V.

**CS 416. Graphics and Computers — (3 units)**

***Prerequisites: CS 306 Introduction to Software Engineering, BSCI 104 Ordinary Differential Equations.***

Fundamental concepts of computer graphics. Graphic devices; graphics languages; interactive systems. Applications to science, engineering and business.

**CS 417. The Windows Environment (3 units)**

***Prerequisites: CS 201 Introduction to Algorithms and Programming, CS 203 Data Structures and Analysis of Algorithms, CS 209 Principles of Programming Languages.***

An overview of historical and current windowing environments and applications will be presented. An in-depth study of one such environment will include design and implementation of a software application to run in the selected environment.

**CS 418. Graphical User Interfaces Concepts — (3 units)**

***Prerequisite: CS 201 Introduction to Algorithms and Programming.***

***System Requirements:***

***Windows 2000 Professional; Windows 2000 Server; Windows XP Home Edition; Windows XP Professional; Windows server 2003 or later.***

This course explores the character and features of the event driven Visual Basic programming language to create sophisticated Visual Basic-based windows applications to solve problems. This course covers user interface management systems, database, and Internet programming.

### **CS 419. Advanced GUI (Graphical User Interfaces) Concepts — (3 units)**

**Prerequisite:** CS 418 *Graphical User Interfaces Concepts*.

This is an extension of CS 418, Graphical User Interfaces, and examines advanced concepts such as on-line Help, Object Linking and Embedding (OLE), Open Data Base Connectivity (ODBC), Dynamic Link Libraries (DLL), Setup Wizard, client/server databases (SQL), custom controls, mixed-language programming, overlay structures, database programming, presentation graphics, math packages, and other concepts associated with the graphical design of user interfaces and event-driven programming. This is a project-driven course requiring student access to current popular programming software.

## **Electrical Engineering**

The state of the art in engineering changes so rapidly that it is imperative for today's engineer to be professionally well equipped; especially the working professional whose academic experience has virtually outlived its usefulness. This area of study offers ample opportunities for such an individual to accelerate his/her technological knowledge. The curriculum is continuously updated to bring in the latest advancements in electronics, control systems, communications, and allied areas.

### **Electrical Engineering**

#### **EE 309. Linear Systems (Continuous) — (3 units)**

**Prerequisite:** ENGR 305 *Basic Circuit Analysis*.

Review of complex numbers, signal operations, vectors and matrices, introduction to signals and systems, Time-Domain analysis of continuous-time systems, Fourier series and Fourier transforms, Laplace transforms, analog filters, state-space analysis.

#### **EE 310. Electronics I — (4 units: 3 guided instruction/1 lab)**

**Prerequisite:** EE 309 *Linear Systems (Continuous)*.

Introduction to Electronics; Operational amplifiers; Active semiconductor devices: diodes, bipolar junction transistors, and field-effect transistors; Digital Integrated Circuits: MOS integrated circuits and Bipolar integrated circuits.

#### **EE 360. Electric Power Fundamentals — (3 units)**

**Prerequisite:** EE 309 *Linear Systems (Continuous)*.

Balanced 3-phase circuits, per unit quantities, circle diagrams, control of voltage and power flow, balanced and unbalanced faults, symmetrical components, sequence networks.

#### **EE 361. Electric Power Distribution I — (3 units)**

**Prerequisite:** EE 360 *Electric Power Fundamentals*.

Review of basic concepts; power and utility factor; transformers; harmonics; voltage regulation; system protection; circuit breakers; lightning protection; fuses and reclosers; insulation; and grounding.

#### **EE 362. Electric Machinery — (3 units)**

**Prerequisite:** EE 309 *Linear Systems (Continuous)*.

This course offers an introduction to electromechanical energy conversion devices and the fundamental principles underlying the operation of electrical machines and transformers. Magnetic circuits and materials and electromechanical energy conversion principles are introduced to build a basis for the study of all machine types. Transformers, synchronous, induction and dc machines and single-phase motors are analyzed in terms of their equivalent circuits, characteristics and performance.

**EE 410. Electronics II — (4 units: 3 guided instruction/1 lab)**

*Prerequisites: EE 310 Electronics I; Familiarity with the Electronics Workbench Multisim or P-SPICE programs would be helpful.*

This course continues to build and develop the knowledge required to design and analyze electronic circuits, a competency that commenced with EE 310. EE 410 focuses on analog circuits, discrete and integrated. The material covered includes differential and multistage amplifiers, frequency response of circuits, principles of feedback, various classes of output stages of power amplifiers, analog integrated circuits, tuned amplifiers and filters, basic principles of signal generators and other waveform-shaping circuits.

**EE 415. Analysis of Probabilistic Systems — (3 units)**

*Prerequisite: EE 309 Linear Systems (Continuous).*

Introduces the principles of probability, random variables, and random signals to engineers and scientists. Both statistical theory and appropriate emphasis on data analysis, statistical computation will be stressed in the course.

**EE 420. Electromagnetic Theory — (3 units)**

*Prerequisite: EE 309 Linear Systems (Continuous).*

Review of vector algebra and calculus, Vector fields, Coulomb's and Gauss' Law, Boundary value problems, Maxwell's equations, electromagnetic wave propagation, polarization, analysis of transmission line, and wave guide antennas.

**EE 430. Fundamentals of Control Systems — (4 units: 3 guided instruction/1 lab)**

*Prerequisites: ENGR 201- Computer Programming for Engineers or equivalent*

*EE 309-Linear Systems (Continuous) or working knowledge of Linear Systems (Continuous); ability to program in C, FORTRAN, or any other computer programming language.*

*Knowledge of MATLAB software is required.*

This course consists of classical approaches to analysis of feedback control systems, Nyquist diagrams, phase-gain diagrams, system stability and compensation. The laboratory part of the course includes computer simulation of related problems. There are 6 laboratory assignments.

**EE 440. Continuous Communication Systems — (3 units)**

*Prerequisite: EE 309 Linear Systems (Continuous).*

Random variables and processes. Analog communication: AM, DSB, SSB, FM, PAM, and PCM systems. Noise characteristics. Noise in AM systems. Noise in FM systems. Noise in PCM systems. Communication systems and noise calculations. Signal-to-noise ratio of different communication systems. Noise sources.

**EE 445. Discrete-Time Control Systems — (3 units)**

*Prerequisites: EE 309 Linear Systems (Continuous), EE 430 Fundamentals of Control Systems, ability to program in C, FORTRAN, or any other computer programming language.*

This course consists of the use of Z-transform, state variable techniques to analyze and design sampled data control systems, data reconstruction, stability analysis, observability and controllability analyses, and controller and observer design.

**EE 450. Solid State Electronic Devices — (3 units)**

*Prerequisites: BSCI 207 Physics II and BSCI 210 Physics III or consent of your professor.*

This course is an introduction to crystallography and growth of semiconductor crystals, atoms and electrons, a brief review of Quantum Mechanics, energy bands and charge carriers, excess carriers in semiconductors, junction theory, diodes, bipolar junction transistors, optoelectric devices, integrated circuits, power devices, and negative conductance devices.

**EE 460. Electric Power Distribution II — (3 units)**

*Prerequisite: EE 360 Electronic Power Fundamentals, EE 361 Electric Power Distribution I, or by permission of professor.*

Review of basic concepts; Distribution Line Construction; Residential Layout; Industrial Loads; Transmission Voltage Levels; HVDC; Superconductors; Transmission Line Parameters: Resistance, Inductance, Capacitance, Equivalent Circuits, Losses; Transmission Line Transient Operation; Symmetrical Faults; Transmission Line Faults; Transmission Line Construction.

**EE 461. Semiconductor Power Electronics — (3 units)**

*Prerequisites: EE 362 Electric Machinery, EE 410 Electronics II.*

Power semiconductor devices, Steady state and Dynamic Computer models. AC/DC, DC/DC, DC/AC and AC/AC power conversion. Applications to Controlled rectifiers, Switching power supplies, Motor drives, HVDC transmission, Induction heating etc. Feedback control loops and their effect on stability.

**EE 470. Optoelectronics — (3 units)**

*Prerequisites: BSCI 104 Ordinary Differential Equations; BSCI 210 Modern Physics; EE 420 Electromagnetic Theory*

*In addition, it is highly recommended that the student has familiarity and capability with topics discussed in courses on Engineering Analysis.*

Review of Electromagnetic Theory; propagation of rays and beams; Propagation of Optical Beams in Fibers; Optical Resonators; Interaction of Radiation and Atomic Systems; Laser Systems; other topics on lasers, propagation, fiber optics and communication.

**Environmental Engineering**

Environmental change and deterioration are now widely recognized as major challenges facing the world. Multi-disciplinary aspects of environmental engineering are the basis for analyzing and understanding air pollution control and global climate change; water and wastewater treatment; groundwater contamination; hazardous waste; risk assessment; resource recovery; qualitative and quantitative analysis of sources of pollutants; and treatment and reduction processes.

Electives emphasize the theory, principles, and practices related to engineering solutions of environmental problems and are suitable both for a professional career and for advanced research.

**Environmental Engineering****ENV 305. Heat and Mass Transfer — (3 units)**

*Prerequisite: ENGR 304 Thermodynamics I.*

This course provides an introduction to the fundamental principles of heat and mass transfer and their application to engineering systems. Topics include steady and transient conduction, forced and free convection and heat transfer, and diffusion mass transfer. Real world problems involving fins and heat exchangers are presented and analyzed.

**ENV 401. Environmental Engineering — (3 units)**

*Prerequisites: ENGR 304 Thermodynamics I*

*A first course in chemistry (i.e., BSCI 208 Chemistry I or the equivalent) will be very useful. The mass balances conducted in this class rely heavily on some basic chemical knowledge. Also, prior knowledge in fluid mechanics (e.g. ME 401) is beneficial but not essential.*

This is an introductory course in environmental engineering. You will study environmental and ecological systems and physical, chemical, and biological processes affecting the fate of chemicals in such systems. You will work problems related to water and wastewater treatment, air pollution, and solid and hazardous wastes. Regulations will be discussed. Also, risk assessment will be used as a means of identifying contaminants of concern. Energy balances will also be discussed.

**ENV 402. Thermodynamics of Processes — (3 units)**

*Prerequisites: ENGR 304 Thermodynamics I, ENV 305 Heat and Mass Transfer.*

This course is a 3 unit undergraduate environmental engineering course. It is third in a series of courses covering the fundamental principles of thermodynamics. This course will cover material and energy balances, liquids and mixtures, vapor-liquid equilibria, equilibrium in chemical reactions, and solubility and absorption.

**ENV 410. Water Quality Measurements — (3 units)**

*Prerequisite: ENV 402 Thermodynamics of Processes.*

Water is essential for human and other living beings. Therefore, the availability of an adequate water supply in terms of quality and quantity is also essential for the existence of life. This course lays the groundwork for the area of quantitative analysis known as water and wastewater analysis. In Part I, the coursework focuses on the chemistry and microbiological processes and techniques essential for analysis of water and wastewater. Part II addresses methods of analytical measurement for ascertaining the quality and contamination level of water from a wide range of sources.

**ENV 420. Air Quality and Air Pollution Measurements — (3 units)**

*Prerequisites: BSCI 206-Physics I (Mechanics), BSCI 208-Chemistry I, ENV 305-Heat and Mass Transfer*

You will investigate the characteristics of the atmosphere, gaseous and particulate air pollution, their sources, effects and controls, and the various methods of measurement, photochemical smog and strategies used to control emissions. Additionally, you will take into consideration various economic issues as defined by welfare effect, public health, and safety issues caused by air and noise pollution within your indigenous areas and prepare solutions of the same.

**ENV 425. Groundwater Hydraulics and Hydrology — (3 units)**

*Prerequisite: ENV 410 Water Quality Measurements.*

Groundwater flow, Darcy Law, steady and unsteady flows, confined and unconfined flows, pumps and pump systems.

**ENV 430. Principles of Water and Wastewater Engineering — (3 units)**

*Prerequisite: ENV 401 Environmental Engineering.*

Water and wastewater characteristics; physical, chemical and biological methods of treatment.

**ENV 440. Hazardous Waste Management — (3 units)**

*Prerequisite: ENV 402 Thermodynamics of Processes.*

Overview of industrial processes which produce hazardous wastes. Principles of toxicology. Federal and state standards. Storage, handling and transport of hazardous waste, and waste minimization.

**Mechanical Engineering**

Many of the technological advances we take for granted today have been designed by mechanical engineers. For example, the analysis and design of automobiles, heating and air-conditioning systems, airplanes, space vehicles, robots, and computer disk drives all require the work of mechanical engineers.

CNU's Mechanical Engineering elective areas include courses that provide a solid foundation for both the mid-career professional and the young high school graduate, with sufficient flexibility to allow for concentrated study in the student's area of interest.

## **Mechanical Engineering**

### **ME 309. Numerical Analysis of Engineering Problems — (3 units)**

***Prerequisites: ENGR 201 Computer Programming for Engineers or Equivalent, BSCI 104 Ordinary Differential Equations***

This course encapsulates algorithmic mathematics in a form that can be easily applied to a wide range of disciplines, in courses such as Digital Signal Processing, Control Theory, Linear Algebra, Numerical Methods, Applied Mathematics, and Advanced Engineering Mathematics. These algorithms are implemented in MATLAB, a programming language, which offers a rich set of capabilities to solve problems in engineering, scientific computing, and mathematical disciplines.

### **ME 310. Fundamentals of Mechatronics — (4 units: 3 guided instruction/1 lab)**

***Prerequisite: ENGR 305 Basic Circuit Analysis, ENGR 306 Engineering Dynamics, ENGR 307 Introduction to Logic Design***

***Laboratory Equipment Requirements include:***

***Access to, or purchase of, a basic voltmeter [DC 200mv -200V; 10Meg max; mA to Amp current measurement; continuity test]***

***An oscilloscope or logic probe***

***Or, instead of numbers 1 and 2 above, a pen-type oscilloscope with voltmeter function.***

***Power supplies, connectors, and pc boards may be purchased from the vendors listed in the course study guide.***

Regardless of discipline, modern practicing engineers will encounter an assembly of mechanical, electrical and electronic components: a blend of disciplines that is being called Mechatronics. In order to participate fully in all stages of engineering, from conceptualization to final product design, a working understanding of the capabilities and limitations of mechatronics is essential. This course provides the student an interdisciplinary approach that intertwines the study of electrical linear circuit analysis with sensors, measurements, electromechanics and computer control and interfacing. During this course, in addition to conventional problem solving, students will design, build, test and report on a mechatronics project, selected with the professor's approval.

### **ME 401. Fluid Mechanics — (3 units)**

***Prerequisite: ENGR 304 Thermodynamics I***

This course introduces the fundamentals of fluid mechanics, and their application to problems commonly encountered by mechanical and civil engineers. Fluids and their behavior are fundamentally important to many mechanical devices and systems found in our modern world. Perhaps the most familiar example is the plumbing system in your home, which is used to distribute water for drinking, cooking, and cleaning. Many of us have air conditioning in our homes, which involve the movement of at least two fluids (the air being cooled and the refrigerant which passes through the compressor, condenser, expansion valve and evaporator). Just a few of the many engineering systems which depend on the movement of fluids for their operation include steam power plants, internal combustion engines, rocket engines, aircraft, hydraulic turbines used for electrical generation, and wind turbines.

Three fundamental equations provide the foundation for fluid mechanics: conservation of mass, conservation of momentum, and conservation of energy. For obvious reasons they are known as the conservation equations. These equations can be written for finite control volumes or differential elements. This course focuses on the control volume forms of the conservation equations and their application to common engineering problems.

### **ME 402. Fluid Dynamics — (3 units)**

***Prerequisite: ME 401 Fluid Mechanics***

Continuation of Elementary Fluid Mechanics. Study of potential flow and boundary layer theory. One-dimensional compressible flow with area change, friction, heating, shock waves, and Prandtl-Meyer expansions.

**ME 403. Heat Transfer — (3 units)**

***Prerequisite: ENGR 304 - Thermodynamics I or equivalent***

This course provides an introduction to the three modes of heat transfer - conduction, convection, and radiation. Emphasis is given to developing equations for common engineering problems.

The principles and applications of heat transfer are relevant to many modern devices. Common everyday examples include the personal computer, the space heating and cooling systems at your home and workplace, automobile engine cooling systems, and power plants for electrical generation. The engineer's task is often to ensure that the operating temperature of certain components does not exceed or fall below safe limits, which requires that heat be efficiently dissipated or absorbed. Cost, space, and weight are additional factors which influence most designs involving heat transfer.

**ME 404. Applied Convective Heat Transfer — (3 units)**

***Prerequisite: ME 403 Heat Transfer***

Continuation of ME 403 Heat Transfer. Heat exchanger design. Review and application of working correlations for high speed flows, evaporation, condensation and boiling.

**ME 405. Thermodynamics II — (3 units)**

***Prerequisite: ENGR 304 Thermodynamics I***

Continuation of Thermodynamics I. Applications of thermodynamic principles to power and refrigeration cycles. Introduction to psychrometry, reactive and non-reactive mixtures, and combustion analysis.

**ME 406. Statics and Strength of Materials II — (3 units)**

***Prerequisite: ENGR 303 Statics and Strength of Materials I***

Design of beams and columns, stress concentrations, statically indeterminate problems, and energy methods.

**ME 407. Machine Design Fundamentals — (3 units)**

***Prerequisites: ENGR 303 Statics & Strength of Materials I, ME 406 Statics & Strength of Materials II***

Design against fatigue, design of fasteners, welded and bonded joints, springs, bearings, gearing, clutches, brakes, couplings, flexible mechanical elements, and shafting.

**ME 408. Advanced Strength and Applied Stress Analysis — (3 units)**

***Prerequisite: ME 406 Statics and Strengths of Materials II***

The topics discussed in this course are treated by going a step or two beyond elementary mechanics of materials. The course provides advanced methods for the stress analysis and design of various load-bearing structures and machines. Stress analysis ensures that each element of a given system will not fail to meet structural requirements of design throughout the specified life of the system.

**ME 409. Mechanical Vibrations — (3 units)**

***Prerequisite: ENGR 201 Computer Programming for Engineers, ENGR 306 Engineering Dynamics***

ME 409 is an analysis of systems in vibratory motion. The course covers response to initial and forced excitations; modal analysis; and one, two, and multiple degree of freedom systems. ME 409 is also an introduction to continuous systems and to applications of vibration analysis, including isolation, absorption, and damping. Important engineering special cases are covered, including axial, bending, and torsional vibratory motion.

**ME 410. System Dynamics — (3 units)**

***Prerequisite: ENGR 306 Engineering Dynamics***

Modeling of dynamic engineering systems and various energy domains using bond graphs, block diagrams, and state equations. Analysis of response of system models.

### **ME 411. Experimental Methods for Engineers — (3 units)**

***Prerequisite: ENGR 305, Basic Circuit Analysis or equivalent***

***Microsoft Excel and PowerPoint will be required to complete some of the assignments.***

Experimentation is an important tool for mechanical engineers. The behavior of some physical systems must be evaluated experimentally since it is too complex to be adequately explained through theoretical analysis. The monitoring and control of processes and operations require that key performance variables be accurately measured. Many prototype designs must be tested for safe operation before they can be sold to the public. In fact, it is difficult to imagine any product designed by engineers that will not require some experimentation during its development. To plan and perform experiments, engineers must understand the fundamentals behind the measurement of physical quantities such as temperature, pressure, strain, and motion, as well as appropriate mathematical techniques for interpreting the measurement results.

After completing this course, a student should be able to plan and perform an experiment related to an engineering topic of their interest. The experiment process includes choosing sensors and data acquisition hardware and software for collecting the data; properly analyzing the data using statistics and error propagation techniques; and effectively communicating the results in various formats (e.g. written reports and PowerPoint presentations).

### **ME 412. Computational Fluid Dynamics (CFD)— (3 units)**

***Prerequisites: ME 309 Numerical Analysis of Engineering Problems, ME 402 Fluid Dynamics***

The course introduces the use of numerical methods for solving the conservation equations of mass, momentum and energy. Application to a variety of practical problems using programs written by the professor. Additional programming by the student is also required.

## **Quality Assurance Science**

The Quality Assurance Science degree program is designed to produce graduates who can manage, plan, procure, design, and maintain effective quality control programs for a variety of industries. Not only does the curriculum provide the fundamental coursework but an important feature is that it also can prepare those who desire certification through the American Society for Quality (ASQ).

### **QAS 201. Total Quality Management — (3 units)**

***Prerequisite: General Education requirement or permission of your professor.***

An introduction to the principles and practices of TQM. Methods of leadership, goal-setting, employee involvement, JIT, benchmarking, QFD and other continuous improvement tools are introduced. Works of TQM pioneers including Deming, Juran, Crosby, Feigenbaum, Ishikawa, Taguchi and Shingo. Current TQM approaches including Baldrige, ISO, and Six-Sigma.

### **QAS 202. Quality Control — (3 units)**

***Prerequisite: General Education requirement or permission of your professor. Calculations can be done on a calculator; however, access to and knowledge of a current Excel program for performing calculations is highly recommended.***

A study of the basic quality control tools and philosophies that contribute to outgoing quality in the workplace. Essentials of quality assurance, control charts, sampling, reliability, quality costs, liability and quality concepts.

### **QAS 203. Inspection and Metrology — (3 units)**

***Prerequisites: High school mathematics through second year algebra; Math 165 General Mathematics***

This course is designed to provide a background in principles of metrology, measurement tools, units of measure, dimensional metrology, measurements systems analysis, measurement error (R&R) studies, calibration and control of measurement equipment.

**QAS 204. Fundamentals of Statistical Process Control — (3 units)**

*Prerequisite: High school Mathematics through second-year Algebra. Pre-Calculus is desirable. Experience with and access to Microsoft Excel or some statistical software package.*

This course is designed to provide a basic background in the philosophy and statistical methods used to achieve control of systems and processes.

**QAS 206. Blueprint Reading — (3 units)**

*Prerequisite: General Education requirement or permission of your professor.*

This course provides a study of working blueprints and drawings commonly used in metalworking/manufacturing industries. Class projects include simple production drawings and complex assembly drawings in addition to sketching of simple machine parts.

**QAS 207. Software Quality Assurance — (3 units)**

*Prerequisite: General Education requirement or permission of your professor.*

A study of industrial, commercial and government requirements for the assurance of Quality Software. Descriptions and evaluations of software quality processes are explored along with management and technical integration techniques used to produce software that meets the project's needs.

**QAS 208. The Economics of Quality — (3 units)**

*Prerequisite: General Education requirement or permission of your professor.*

This course provides a practical and useful study of the principles of quality costs. The course emphasizes the proper implementation of a company-wide quality cost system designed to optimize costs in the four major quality cost segments-prevention, appraisal and internal and external failure.

**QAS 209. Supplier Quality Management — (3 units)**

*Prerequisite: General Education requirement or permission of your professor; Math Skills.*

The course provides an overview of supplier quality assurance principles and techniques stressing methods for obtaining quality products and services from suppliers. Discussed are supplier evaluation and selection, communication of quality requirements, performance measurement, solving supplier quality problems, and legal aspects of the customer-supplier relationship.

**QAS 305. Baldrige Organizational Excellence Systems — (3 units)**

*Prerequisite: QAS 201 Total Quality Management*

This course provides a comprehensive review of Baldrige Organizational Performance Excellence Management principles and philosophies, focusing on quality and continuous improvements in all aspects of business operation. A balance of case studies Baldrige winners, critical thinking activities and review questions will be used.

**QAS 308. Quality Problem Solving — (3 units)**

*Prerequisite: General Education requirement or permission of your professor.*

This course explores the Quality Problem Solving process and stresses proper selection and implementation of Corrective Action. Analytical techniques including Kaizen, Mistake-Proofing, and Root Cause Analysis are used to show how companies solve and prevent recurrence of quality problems.

**QAS 310. Quality Engineering — (3 units)**

*Prerequisite: QAS 202 Quality Control.*

This course presents an overview of quality engineering concepts as applied to in manufacturing and service industries. Topics covered include quality standards, improvement tools, basic statistics, process and material control and measurement systems. This course is also based on the quality engineering body of knowledge as

identified by the American Society for Quality (ASQ), focusing on, but not limited to the following quality engineering topics: (a) quality control systems, (b) testing and inspection procedures, (c) metrology and statistical methods, (d) human factors and motivation, (e) quality cost concepts and techniques, (f) management information systems, (g) auditing quality systems, etc.

**QAS 320. Quality Auditing — (3 units)**

*Prerequisite: General Education requirement or permission of your professor.*

An overview of quality auditing principles and techniques; auditor qualifications; and how to prepare for, conduct, report on a quality audit to ISO 9000 or other standards, and post-audit and follow-up surveillance activities. Audit documentations, interpretations, checklists, effective questioning and listening techniques, and nonconformance reports.

**QAS 330. Quality Planning — (3 units)**

*Prerequisite: QAS 202 Quality Control.*

This course provides a comprehensive review of Quality Planning with focus on integration of quality and continuous improvements in all aspects of business operation. Building an integrated quality/business strategic plan, environmental analysis, and the role of leadership and vision. A balance of Case Studies, critical thinking activities and Review Questions are presented to illustrate the major concepts.

**QAS 340. Taguchi Methods — (3 units)**

*Prerequisite: QAS 202 Quality Control.*

An introduction to the experimental design and quality control methods of Dr. Genichi Taguchi. Taguchi's methods are covered with studies on products, processes and experimental designs used for quality improvement.

**QAS 350. Customer Relationship and Satisfaction — (3 units)**

*Prerequisite: You should be familiar with Microsoft Word, Microsoft Excel, and have the ability to view Microsoft Power Point Presentations.*

The purpose of this course is to familiarize the student with the necessity to build customer relationship and to accurately measure customer satisfaction levels and effectively link customer satisfaction excellence to process improvement and business financial success. The student will learn why customer satisfaction has become so critical and the various methodologies available to effectively assess customer satisfaction levels.

**QAS 410. Reliability Methods — (3 units)**

*Prerequisite: QAS 204 Fundamentals of Statistical Process Control.*

A study of reliability methods with emphasis on the principles of reliability design, prediction methods, maintainability and availability, system reliability, and analysis of reliability data. Role, methodologies, and implementation of Failure Mode and Effects Analysis (FMEA) in design, process and preventive action.

**QAS 420. Geometric Dimensioning and Tolerancing — (3 units)**

*Prerequisite: QAS 206 Blueprint Reading.*

A study of geometric dimensioning and tolerancing in accordance with ANSI Y14.5 and ASME Y 14.5M - 1994. Standard U.S. methodology and symbology are practiced and demonstrated to be compatible with international standard ISO 1101.

**QAS 430. Experimental Design — (3 units)**

*Prerequisite: QAS 204 Fundamentals of Statistical Process Control.*

A study of Experimental Designs used in quality control. This course emphasizes the basic principles of Experimental Designs and focuses on classical and modern designs along with proper design selection.

**QAS 440. ISO Quality Systems — (3 units)**

***Prerequisite: QAS 202 Quality Control.***

A study of modern day Quality Assurance Systems with an emphasis on preparation and planning for system registration based on the ISO 9000 standards. Other standards introduced are: QS 9000 (automotive), AS 9000 (aerospace), Q19000 (Boeing), GMP (FDA), TL 9000 (telecommunications), and ISO 14000 (environmental).

**QAS 460. Process Control and Capability — (3 units)**

***Prerequisite: None.***

A detailed study of procedures and methods for performing machine and process capability studies, supplier capability studies, process and machine improvement, test and process troubleshooting and process capability database management.

**QAS 470. Graduate Statistical Process Control Methods and Applications — (3 units)**

***Prerequisite: QAS 204 Fundamentals of Statistical Process Control.***

This course builds on the fundamentals of Statistical Process Control (SPC) Methods. Case studies will be used to show how SPC methods are applied in organizations. Hands-on use of Microsoft Excel or some other statistical software package will be required.

**QAS 480. Six Sigma Methods — (3 units)**

***Prerequisite: QAS 202 Quality Control***

***Experience of at least six months working in Quality or Statistics will be helpful but not mandatory.***

This course provides a comprehensive review of Six Sigma Methods, focusing on quality and continuous improvement in all aspects of business operation. Critical to Quality (CTQ), DMAIC Methodology, and Design for Six Sigma (DFSS). Case studies, critical thinking activities and review questions will be used to illustrate major concepts

## **Master of Science in Engineering Degree**

The engineering programs at the undergraduate and graduate levels are designed to prepare students for rewarding careers in these fields. Graduates are expected to possess sufficient knowledge to achieve professional certification (e.g., registration as a Professional Engineer), if they choose to do so. Expected outcomes for each degree program are based on guidelines established by professional organizations such as the *Accreditation Board for Engineering and Technology* (ABET).

### **Master of Science in Engineering Program Objectives:**

The MSE curriculum is designed for working professionals who wish to enhance their technical skills for career advancement. The MSE program objective is to provide a core of knowledge related to analytical and management tools, supplemented by advanced technical electives in the student's area of interest.

### **MSE Program Learning Outcomes:**

- A knowledge of advanced mathematics, including analytical and numerical techniques for solving ordinary and partial differential equations.
- An understanding of management concepts related to product quality.
- An appreciation for advances in computer technology relevant to the practice of engineering.
- An in-depth knowledge of topics in a specific field of engineering.
- An ability to communicate the results of a comprehensive research project.

### **MASTER OF SCIENCE IN ENGINEERING DEGREE PROGRAM REQUIREMENTS**

A Bachelor of Science degree in Engineering or in a related field is required. Applicants must have a 3.0 cumulative GPA in their Bachelor's degree program to be eligible for the Master's program, or in special circumstances, may be accepted with approval from the Faculty Advisor and Academic Dean.

The Master of Science in Engineering degree program requires successful completion of 36 units of coursework. Students are expected to maintain a 3.0 GPA.

Students with a non-engineering Bachelor's degree may need additional Calculus, Physics, and 300-level and 400-level engineering courses to prepare them for engineering graduate courses.

The degree requirements are organized in the following categories:

Graduate Core	12 units
Electives	18 units
Master's Project	6 units
TOTAL	36 units

### **THE STUDENT MUST OWN OR HAVE ACCESS TO A COMPUTER.**

### **ELECTIVES**

The elective courses must be chosen with the assistance and formal approval of the Faculty Advisor and the Dean of Academic Affairs. Elective courses may be chosen from the six elective areas listed below, but must form a coherent plan of study. Approval of the elective program must be established before the student completes 3 graduate-level courses.

#### **Elective Areas:**

**Computer Engineering**  
**Electrical Engineering**  
**Mechanical Engineering**

**Computer Science**  
**Environmental Engineering**  
**Quality Assurance Science**

## **MASTER'S PROJECT**

The Master's Project (6 units) is initiated with an approved proposal on a relevant and current subject. The student will work closely with the Project Committee, consisting of the Dean of Engineering and two Faculty members. The Project culminates with a formal report, which must be approved by the Project Committee.  
Master of Science in Engineering

### **COURSE LISTINGS GRADUATE CORE (12 Units)**

<u>ENGR</u> <u>501</u>	Graduate Engineering Analysis	3 Units
<u>ENGR</u> <u>502</u>	Graduate Engineering Statistics	3 Units
<u>ENGR</u> <u>503</u>	Graduate Total Quality Assurance Management	3 Units
<u>MIS 502</u>	Graduate Computers & Management Information Systems	3 Units

### **ELECTIVES Select (18 Units)**

The elective courses must be chosen with the assistance and formal approval of the Faculty Advisor and the Dean of Academic Affairs. Elective courses may be chosen from the six elective areas listed below, but must form a coherent plan of study. Approval of the elective program must be established before the student completes 3 graduate-level courses.

Select 18 Units with Faculty Advisor.

Computer Engineering  
Electrical Engineering  
Mechanical Engineering  
Computer Science  
Environmental Engineering  
Quality Assurance Science

### **MASTER'S PROJECT (6 Units)**

<u>MSE</u> <u>599A</u>	Master's Project (Research and Development)	3 Units
<u>MSE</u> <u>599B</u>	Master's Project (Final Report)	3 Units

### **General Engineering**

#### **ENGR 501. Graduate Engineering Analysis — (3 units)**

*Prerequisite: Graduate Standing, BSCI 104 Ordinary Differential Equations.*

Analytical methods applied to the solution of advanced engineering problems. This will include solution of ordinary differential equations by iteration of infinite series. The study of Legendre Polynomials, Bessel Functions, Sturm Series, and the Eigenvalue Problem. Also the study of partial differential equations, using Fourier Series solutions,

and applying this to the solution of the wave and heat equations; and the solution of systems of ordinary differential equations and some of the applications.

#### **ENGR 502. Graduate Engineering Statistics — (3 units)**

*Prerequisites: BSCI 102 Calculus II (3 Units).*

A study of advanced probability distributions, sampling theory, hypothesis testing, linear regression and estimation, advanced statistical applications and confidence intervals.

### **ENGR 503. Graduate Total Quality Assurance Management — (3 units)**

***Prerequisite: Graduate standing.***

A study of the functions and responsibilities of the quality organization. TQM concepts, QFD, JIT, SPC, and all other continuous improvement tools will be utilized as part of this course focusing on TQM deployment. The focus of this course will be on the people, organizational and technical issues related to implementation of quality systems.

Management Information Systems

### **MIS 502. Graduate Computers & Management Information Systems — (3 units)**

***Prerequisite: None. You should have completed prior, lower level course in Information Systems, or have the appropriate work experience. For each of the case studies that students will complete in this course, students are expected to prepare PowerPoint slides.***

An introduction to the study and practice of information systems management. The objective is to facilitate students' understanding of the structure, development, and management of information systems that can support a wide range of organizational functions at various levels with a view to develop a capability to analyze and/or to design an information system to satisfy business needs. Component parts of the information system are studied, together with the interactions between such components.

The discussion assumes logical reasoning to be the core of conceptualization. Thus, much of the material covered appears to be a re-statement of common sense logic, which in fact it is. You will frequently observe formalized statements of natural reasoning in the context of computer operations and information systems structure and application.

#### **Electives / Elective Areas:**

*The elective courses must be chosen with the assistance and formal approval of the Faculty Advisor and the Dean of Academic Affairs. Elective courses may be chosen from the six elective areas listed below, but must form a coherent plan of study. Approval of the elective program must be established before the student completes 3 graduate-level courses.*

#### **Computer Engineering**

Computer engineering has now come of age. For a quarter of a century it has grown into an area of study quite apart from its initial position as a sub-discipline of electrical engineering. Even within computer engineering, the state of the art is rapidly changing. A working professional has to keep abreast of technological innovations and discoveries to perform effectively in today's marketplace. This curriculum is continuously updated to bring in the latest advancements covered in its vast span.

### **CE 420. Digital Circuit Design — (4 units: 3 guided instruction/1 lab)**

***Prerequisites: EE 309 Linear Systems (Continuous), EE 310 Electronics I.***

Non-linear devices and their input-output relationships, design of memory elements and logic gates, design techniques, e.g. TTL, PMOS, CMOS, DTL, etc., introduction to VLSI.

### **CE 430. Computer Design — (3 units)**

***Prerequisite: ENGR 307 Introduction to Logic Design.***

General-purpose digital computers, hardware modules, control and arithmetic units, computer organization, and introduction to fault analysis.

**CE 440. Microprocessor Systems Design — (4 units: 3 guided instruction/1 lab)**

*Prerequisite: ENGR 307 Introduction to Logic Design.*

Introduction to the architecture, hardware, and software of a variety of microprocessors, including advanced RISC microprocessors. Major emphasis is a design project. The course will present microprocessor architecture, memory hierarchy, and pipelining. The Intel 80X86 and Motorola 68000 processors will be covered with emphasis on addressing modes and instruction sets. Various RISC processors will also be covered.

**CE 504. Knowledge-Based Systems — (3 units)**

*Prerequisites: ENGR 307 Introduction to Logic Design, EE 415 Analysis of Probabilistic Systems or consent of instructor, Ability to program in C, C++ or any other computer programming language.*

This course covers the study and use of knowledge-based systems from an applied approach. Cognitive science and formal logic are highlighted throughout. The course starts with an overview of intelligent systems and concludes with a hands-on intelligent system created as a class product. This course will address knowledge-based systems technology that involves fuzzy systems theory, neural network theory, artificial intelligence principles, and expert system development methodologies.

**CE 505. Discrete Communication Systems — (3 units)**

*Prerequisites: Graduate Standing, working knowledge of CE 303 Linear Systems (Discrete) or equivalent.*

The course consists of random processes, information sources and source coding, analog signal transmission and reception, digital transmission through an additive white Gaussian noise (AWGN) channel, digital PAM transmission through band limited AWGN channels, digital transmission via carrier modulation, channel capacity and coding, and spread-spectrum communication systems.

**CE 506. Digital Systems Structure — (3 units)**

*Prerequisite: Graduate standing.*

Design of various components of a modern digital computer, e.g. Adders, Subtractors, Multipliers, etc., ICs, arithmetic algorithms.

**CE 507. Random Processes — (3 units)**

*Prerequisites: Graduate Standing, EE 415 Analysis of Probabilistic Systems.*

This course introduces random variables and processes, ergodicity, stationary, spectra of random processes, estimation, filtering and prediction of systems to engineers and scientists. Appropriate emphasis on data analysis, statistical computations and applications of engineering will be stressed in the course.

**CE 508. Switching Theory I — (3 units)**

*Prerequisites: Graduate Standing, ENGR 307 Introduction to Logic Design.*

Switching functions and their design, arrays and coding schemes, multiple value logic.

**CE 509. Switching Theory II — (3 units)**

*Prerequisite: CE 508 Switching Theory I.*

Advanced topics in continuation of Switching Theory I, reliability, hazards, synchronization, etc.

**CE 510. Fault Tolerant Systems — (3 units)**

*Prerequisites: Graduate standing and at least two graduate/senior level courses in digital electronics and CE 508 Switching Theory I.*

Testing for testability of digital systems, diagnostic tests and remedies for sequential logic, examples.

**CE 511. Microprocessor Applications — (3 units)**

*Prerequisites: Graduate Standing, a senior-level course in microprocessors.*

Microprocessor based systems, design and development of system architecture and peripherals.

**CE 512. Verilog HDL — (3 units)**

*Prerequisites: Graduate Standing, ENGR 307 Introduction to Logic Design, a course in sequential logic design, CE 430 Computer Design*

Introduction to Hardware Description Languages (HDLs). Comparison of HDLs. History of Verilog HDL. Verilog language elements: identifiers, data types. Verilog expressions: operands, operators. Gate level modeling using built-in primitives. Creating user-defined primitives. Verilog design using the following modeling constructs: data flow modeling, behavioral modeling, and structural modeling. Combinational logic design using Verilog modeling constructs. Sequential logic design (including state machines) using Verilog modeling constructs. Verification of designs using test benches for simulation. Analyzing simulation waveforms and binary output. The best way to learn Verilog is to design modules and then simulate them; therefore, there will be ten homework assignments, seven laboratories, and one CPU design project. The project will use a pipelined RISC architecture. All will be done using the Verilog simulator.

**CE 530. Advanced Computer Design — (3 units)**

*Prerequisite: ENGR 307 Introduction to Logic Design or equivalent, Graduate Standing.*

The course presents a contemporary approach to Computer Design. The student will study systems architecture, computer organization, logic unit operation, computer arithmetic and pipelining.

**Computer Science**

**CS 411. Artificial Intelligence — (3 units)**

*Prerequisite: CS 203 Data Structures and Analysis of Algorithms.*

This course presents an introduction to the application of intelligent systems to practical problems. The intelligent systems considered in this course are expert systems, fuzzy systems, neural networks, evolutionary computation, hybrid algorithms, and data mining.

**CS 412. The UNIX Environment for Programmers — (3 units: 2 guided instruction/1 lab)**

*Prerequisite: CS 307 Introduction to Operating Systems.*

This course provides a technical overview of the UNIX operating system, providing hands-on experience with commands and files. Students will explore the basic structure, functions, and tools of the UNIX operating system. Topics include basic UNIX commands, files and directories, text editing, electronic mail, pipes and filters, shell environments, scripting and programming in the UNIX environment.

**CS 413. Programming Languages and Software Methodology (3 units: 2 guided instruction/1 lab)**

*Prerequisite: CS 306 Introduction to Software Engineering.*

This course introduces various fundamental concepts that are generic to essentially all programming languages. Topics include variables, expressions, statements, data types, scope, procedures, exception handling, and concurrency. This course also discusses the various tradeoffs associated with implementing and using these constructs in a language along with an in-depth analysis of the proper methodology by which they should be employed. Laboratory exercises enable you to explore these concepts and methodologies using a language you are familiar with.

**CS 414. Principles of Operating Systems — (3 units)**

*Prerequisites: CS 307 Introduction to Operating Systems, CS 412 The Unix Environment for Programmers.*

An in-depth study of operating system principles, their descriptions, behavior, problems, and design. Concurrent

processes, mutual exclusion, cooperation, deadlocks, resource allocation, storage management and protection are covered. Detailed study of specific systems.

**CS 415. Object-Oriented Programming Concepts — (3 units)**

*Prerequisites: CS 202C Computer Programming in C, CS 209 Principles of Programming Languages*  
*Although not a prerequisite for this course, having taken CS 202J Introduction to HTML and Java will be helpful and advantageous.*

This course covers principles of object-oriented design and programming. Topics include the role of objects, classes, methods, message passing, encapsulation, polymorphism, inheritance, and instantiation. Topics are illustrated using an object-oriented language such as Java, C++ or Smalltalk/V.

**CS 416. Graphics and Computers — (3 units)**

*Prerequisites: CS 306 Introduction to Software Engineering , BSCI 104 Ordinary Differential Equations.*  
Fundamental concepts of computer graphics. Graphic devices; graphics languages; interactive systems. Applications to science, engineering and business.

**CS 417. The Windows Environment (3 units)**

*Prerequisites: CS 201 Introduction to Algorithms and Programming, CS 203 Data Structures and Analysis of Algorithms, CS 209 Principles of Programming Languages.*

An overview of historical and current windowing environments and applications will be presented. An in-depth study of one such environment will include design and implementation of a software application to run in the selected environment.

**CS 418. Graphical User Interfaces Concepts — (3 units)**

*Prerequisite: CS 201 Introduction to Algorithms and Programming.*

*System Requirements:*

*Windows 2000 Professional; Windows 2000 Server; Windows XP Home Edition; Windows XP Professional; Windows server 2003 or later.*

This course explores the character and features of the event driven Visual Basic programming language to create sophisticated Visual Basic-based windows applications to solve problems. This course covers user interface management systems, database, and Internet programming.

**CS 419. Advanced GUI (Graphical User Interfaces) Concepts — (3 units)**

*Prerequisite: CS 418 Graphical User Interfaces Concepts.*

This is an extension of CS 418, Graphical User Interfaces, and examines advanced concepts such as on-line Help, Object Linking and Embedding (OLE), Open Data Base Connectivity (ODBC), Dynamic Link Libraries (DLL), Setup Wizard, client/server databases (SQL), custom controls, mixed-language programming, overlay structures, database programming, presentation graphics, math packages, and other concepts associated with the graphical design of user interfaces and event-driven programming. This is a project-driven course requiring student access to current popular programming software.

**CS 501. Theory of Computation — (3 units)**

*Prerequisites: Completion of all college-level mathematics, including discrete mathematics, Graduate Standing.*

You will study formal models of computation, including finite automata, and Turing Machines; and the concepts of context-free, context-sensitive, and unrestricted grammars; and Church's thesis and other models. You will also understand the equivalence between the models and grammars.

**CS 502. Advanced Operating Systems — (3 units)**

*Prerequisites: CS 414 Principles of Operating Systems or equivalent, Graduate Standing.*

An in-depth study of state of the art operating systems, their descriptions, behavior, problems and design.

**CS 503. Algorithms, Concurrency and Computational Limits — (3 units)**

*Prerequisites: Graduate Standing, CS 203 Data Structures and Analysis of Algorithms or equivalent, BSCI 105 Probability and Statistics, CS 501 Theory of Computation.*

You will study Sequential Algorithms and Parallel Algorithms in dealing with some important mathematical problems; the related complexity of computation and data processing; and Distributed Computing Systems.

**CS 504. Communications and Networking — (3 units)**

*Prerequisites: Graduate Standing, CS 200 Fundamental Concepts of Information & Computer Technology.*

This course introduces students to Communication and Computer Network administration. It presents an overview of

networking basics, directory structure, the file system, and drive mapping. Students will learn to establish network connections, recognize and locate directory services components, create user objects, and use utilities to manage files, directories, and volumes.

**CS 505. Advanced Software Methodology — (3 units)**

*Prerequisites: Graduate Standing, CS 413 Programming Languages and Software Methodology or equivalent.*

An examination of the critical problems underlying the specification, design, development and evaluation of large software systems.

**CS 506. Advanced Computer Architecture — (3 units)**

*Prerequisite: CS 504 Communications and Networking.*

Analysis and evaluation of individual computers, networks of computers and the programs which support their operation. Emphasis on the comparison of various architectures, their benefits and drawbacks.

**CS 507. Computer System Security — (3 units)**

*Prerequisite: CS 506 Advanced Computer Architecture.*

This course provides an overview of issues in security of organizational information systems. Without their information technologies, many present-day organizations would fail within days. Even a few hours of partial loss is extremely expensive. Disruption of computer-based information systems costs business enterprises millions of dollars each year. Information systems security ostensibly regards hazards intentionally posed by disgruntled workers, juvenile vandals, or industrial spies. In practice, however, security management considers both intentional and accidental hazards because they are equally mitigated by the same protective measures. The course will survey issues of hazard including errors, acts-of-nature, assault, falsification, malicious code (viruses and worms), cracking (hacking), fraud, espionage and vandalism. Also surveyed will be issues of safeguard such as access control, encryption, virus protection, and backup recovery; and issues of risk management such as risk analysis, safeguard design, password management and disaster recovery planning. The course will consider selected technologies more closely such as encryption, operating systems security, and telecommunications network security. Related topical issues of particular interest will include the special responsibility of computer professionals regarding the privacy of personal information and the growing abuse of communications networks (“phreaking”).

**CS 508. Distributed and Real-Time Systems — (3 units)**

*Prerequisite: CS 506 Advanced Computer Architecture.*

A study of the architectures and operating systems capable of supporting distributed computing. An examination

of the issues involved in the design and subsequent implementation of such systems. Applications of this architecture in real-time system design and maintenance.

**CS 509. System Performance Analysis — (3 units)**

*Prerequisite: CS 506 Advanced Computer Architecture.*

An introduction to the techniques used to evaluate a hardware system. Techniques used to evaluate computer hardware architecture, vector and multiprocessor architectural design, mass storage device characteristics, memory hierarchy design and interconnection devices are presented.

**CS 510. Advanced Network Topology — (3 units)**

*Prerequisites: CS 502 Advanced Operating Systems, CS 504 Communications and Networking.*

This course provides an overview of issues in advanced network topology. Design and analysis of high-speed networks and their protocols. Topics include: multimedia services integrating voice, data, image and video signals, various switching techniques including synchronous transfer modes. ATM network traffic control, ATM experimental networks, high speed LANs/MANs and internetworking with high speed networks.

**CS 511. Distributed and Parallel Programming Constructs — (3 units)**

*Prerequisite: CS 504 Communications and Networking.*

This course introduces you to Multithreading techniques. It deals primarily with Programming Architecture. It presents an overview of Symmetric processing, NUMA System and the different subsystems that come into play in programming on local and virtual machines. You will learn to “navigate” through the Clusters, to follow the traffic in Networking Programming, to work with parallel application, and distinguish the steps and processes of the Router.

**CS 512. Software Performance Evaluation — (3 units)**

*Prerequisite: CS 505 Advanced Software Methodology.*

Introduction to the techniques which predict and verify the quality of performance of a hardware/software system. Examination of the measures of software performance such as execution time, utilization of resources, and cost-to-performance ratios. Presentation of approaches to building models to capture their performance features of a real system.

**Electrical Engineering**

**EE 410. Electronics II — (4 units: 3 guided instruction/1 lab)**

*Prerequisites: EE 310 Electronics I; Familiarity with the Electronics Workbench Multisim or P-SPICE programs would be helpful.*

This course continues to build and develop the knowledge required to design and analyze electronic circuits, a competency that commenced with EE 310. EE 410 focuses on analog circuits, discrete and integrated. The material covered includes differential and multistage amplifiers, frequency response of circuits, principles of feedback, various classes of output stages of power amplifiers, analog integrated circuits, tuned amplifiers and filters, basic principles of signal generators and other waveform-shaping circuits.

**EE 415. Analysis of Probabilistic Systems — (3 units)**

*Prerequisite: EE 309 Linear Systems (Continuous).*

Introduces the principles of probability, random variables, and random signals to engineers and scientists. Both statistical theory and appropriate emphasis on data analysis, statistical computation will be stressed in the course.

**EE 420. Electromagnetic Theory — (3 units)**

*Prerequisite: EE 309 Linear Systems (Continuous).*

Review of vector algebra and calculus, Vector fields, Coulomb's and Gauss' Law, Boundary value problems, Maxwell's equations, electromagnetic wave propagation, polarization, analysis of transmission line, and wave guide antennas.

**EE 430. Fundamentals of Control Systems — (4 units: 3 guided instruction/1 lab)**

*Prerequisites: ENGR 201- Computer Programming for Engineers or equivalent*

*EE 309-Linear Systems (Continuous) or working knowledge of Linear Systems (Continuous); ability to program in C, FORTRAN, or any other computer programming language.*

*Knowledge of MATLAB software is required.*

This course consists of classical approaches to analysis of feedback control systems, Nyquist diagrams, phase-gain diagrams, system stability and compensation. The laboratory part of the course includes computer simulation of related problems. There are 6 laboratory assignments.

**EE 440. Continuous Communication Systems — (3 units)**

*Prerequisite: EE 309 Linear Systems (Continuous).*

Random variables and processes. Analog communication: AM, DSB, SSB, FM, PAM, and PCM systems. Noise characteristics. Noise in AM systems. Noise in FM systems. Noise in PCM systems. Communication systems and noise calculations. Signal-to-noise ratio of different communication systems. Noise sources.

**EE 445. Discrete-Time Control Systems — (3 units)**

*Prerequisites: EE 309 Linear Systems (Continuous), EE 430 Fundamentals of Control Systems, ability to program in C, FORTRAN, or any other computer programming language.*

This course consists of the use of Z-transform, state variable techniques to analyze and design sampled data control systems, data reconstruction, stability analysis, observability and controllability analyses, and controller and observer design.

**EE 450. Solid State Electronic Devices — (3 units)**

*Prerequisites: BSCI 207 Physics II and BSCI 210 Physics III or consent of your professor.*

This course is an introduction to crystallography and growth of semiconductor crystals, atoms and electrons, a brief review of Quantum Mechanics, energy bands and charge carriers, excess carriers in semiconductors, junction theory, diodes, bipolar junction transistors, optoelectric devices, integrated circuits, power devices, and negative conductance devices.

**EE 460. Electric Power Distribution II — (3 units)**

*Prerequisite: EE 360 Electronic Power Fundamentals, EE 361 Electric Power Distribution I, or by permission of professor.*

Review of basic concepts; Distribution Line Construction; Residential Layout; Industrial Loads; Transmission Voltage Levels; HVDC; Superconductors; Transmission Line Parameters: Resistance, Inductance, Capacitance, Equivalent Circuits, Losses; Transmission Line Transient Operation; Symmetrical Faults; Transmission Line Faults; Transmission Line Construction.

**EE 461. Semiconductor Power Electronics — (3 units)**

*Prerequisites: EE 362 Electric Machinery, EE 410 Electronics II.*

Power semiconductor devices, Steady state and Dynamic Computer models. AC/DC, DC/DC, DC/AC and AC/AC power conversion. Applications to Controlled rectifiers, Switching power supplies, Motor drives, HVDC transmission, Induction heating etc. Feedback control loops and their effect on stability.

**EE 470. Optoelectronics — (3 units)**

*Prerequisites: BSCI 104 Ordinary Differential Equations; BSCI 210 Modern Physics; EE 420 Electromagnetic Theory*

*In addition, it is highly recommended that the student has familiarity and capability with topics discussed in courses on Engineering Analysis.*

Review of Electromagnetic Theory; propagation of rays and beams; Propagation of Optical Beams in Fibers; Optical Resonators; Interaction of Radiation and Atomic Systems; Laser Systems; other topics on lasers, propagation, fiber optics and communication.

**EE 510. R.F. Electronics Design — (3 units)**

*Prerequisite: EE 310 Electronics I and EE 410 Electronics II.*

This course continues to build on and develop the knowledge required to design and analyze electronic circuits, a competency that commenced with EE 310 and EE 410. EE 510 focuses on RF circuit design, theory and applications. The material covered includes transmission line analysis, the Smith Chart, single and multiport networks, modeling of active RF components, matching and biasing networks, and RF transistor amplifier design.

**EE 530. Advanced Control Systems — (3 units)**

*Prerequisites: Graduate Standing, EE 430 Fundamentals of Control Systems; ability to program in MATLAB software package.*

This course consists of Probability Theory, Random Variables, Mathematical Descriptions of Random Signals, response of Linear Systems to Random Inputs, Wiener Filtering, Discrete Kalman Filter, State-Space Modeling, Prediction, and Applications of Kalman Filtering.

**EE 535. Optimal Control — (3 units)**

*Prerequisites: EE 430 Fundamentals of Control Systems; Working knowledge of State Variables in Control Systems; ability to program in C; FORTRAN, or any other computer programming language.*

This course consists of Multivariable Linear Systems, Vector Random Processes, Transient and Tracking Performance Analyses, Stability of Feedback Systems, Linear Quadratic Regulator, Kalman Filter, Linear Quadratic Gaussian Control, Hamiltonian Equations and Riccati Equation.

**EE 540. Communication Engineering — (3 units)**

*Prerequisites: Graduate Standing, EE 440 Continuous Communication Systems.*

This course covers noise in communications systems, voice signal digitization, digital radio, line-of-sight microwave links, communication satellites, satellite earth stations, satellite access, satellite links, fiber-optic communications, optical fiber communications systems analysis and design, systems measurements and performance evaluation, and elements of HDTV.

**EE 541. Digital Communication Systems — (3 units)**

*Prerequisites: EE 410 Electronics II, EE 540 Communication Engineering.*

Introduction to digital communication systems. Topics include signals and spectra; formatting and baseband transmission; Pulse Code Modulation; bandpass modulation and demodulation, such as Phase Shift Keying, Frequency Shift Keying, and Amplitude Shift Keying; coherent detection; error performance; Communications link analysis, Channel coding; Synchronization.

**EE 545. Modern Electronics Techniques — (3 units)**

*Prerequisites: Graduate Standing, EE 310 Electronics I, EE 410 Electronics II.*

Advanced topics in electronic circuits such as switching amplifiers, power amplifiers at high frequency, thermal effects, and audio design.

**EE 560. Computer Methods in Power Engineering — (3 units)**

*Prerequisites: EE 530 Advanced Control Systems, CE 507 Random Processes.*

Computational and mathematical theories as applied to power systems. Linear Algebra, Matrix theory: Network modeling and Load Flow analysis. Optimization Theory: Linear and Nonlinear programming. Optimal control theory: Economic operation of power systems. Stability theory of nonlinear systems and power system applications. Kalman Filtering and power system state estimation. Emphasis on theory and derivations.

**EE 561. Power System Analysis — (3 units)**

*Prerequisite: EE 560 Computer Methods in Power Engineering.*

Steady state and Dynamic models of electric machines. Computer models of networks. Power flow solutions. Economic operation of power systems. State estimation of power systems. Contingency analysis.

**EE 570. Optical Networks — (3 units)**

*Prerequisites: EE 440 Continuous Communication Systems, EE 470 Optoelectronics.*

The revolution in networking has been energized by the availability of optical networks, which can provide the ever-increasing demand for bandwidth. This course begins with an introduction to optical networks, fiber losses, components needed to build a network, modulation and demodulation of light signals, first generation optical networks, select WDM networks, topologies, control and management of connections, and time division multiplexed networks. This course investigates advanced topics in fiber optics data communications with particular attention to WDM, DWDM, SONET, and ATM technologies. Understand how DWDM optical solutions will change current networking practices. Learn how the competitive environment will use optical networking with ATM, IP, and SONET. Deploy optical network solutions across a LAN using Gigabit Ethernet, filter LANs, and eliminate bandwidth bottlenecks and improve flexibility of network services.

**Environmental Engineering**

**ENV 401. Environmental Engineering — (3 units)**

*Prerequisites: ENGR 304 Thermodynamics I*

*A first course in chemistry (i.e., BSCI 208 Chemistry I or the equivalent) will be very useful. The mass balances conducted in this class rely heavily on some basic chemical knowledge. Also, prior knowledge in fluid mechanics (e.g. ME 401) is beneficial but not essential.*

This is an introductory course in environmental engineering. You will study environmental and ecological systems and physical, chemical, and biological processes affecting the fate of chemicals in such systems. You will work problems related to water and wastewater treatment, air pollution, and solid and hazardous wastes. Regulations will be discussed. Also, risk assessment will be used as a means of identifying contaminants of concern. Energy balances will also be discussed.

**ENV 402. Thermodynamics of Processes — (3 units)**

*Prerequisites: ENGR 304 Thermodynamics I, ENV 305 Heat and Mass Transfer.*

This course is a 3 unit undergraduate environmental engineering course. It is third in a series of courses covering the fundamental principles of thermodynamics. This course will cover material and energy balances, liquids and mixtures, vapor-liquid equilibria, equilibrium in chemical reactions, and solubility and absorption.

**ENV 410. Water Quality Measurements — (3 units)**

*Prerequisite: ENV 402 Thermodynamics of Processes.*

Water is essential for human and other living beings. Therefore, the availability of an adequate water supply in terms of quality and quantity is also essential for the existence of life. This course lays the groundwork for the area of quantitative analysis known as water and wastewater analysis. In Part I, the coursework focuses on the chemistry and microbiological processes and techniques essential for analysis of water and wastewater. Part II

addresses methods of analytical measurement for ascertaining the quality and contamination level of water from a wide range of sources.

**ENV 420. Air Quality and Air Pollution Measurements — (3 units)**

*Prerequisites: BSCI 206-Physics I (Mechanics), BSCI 208-Chemistry I, ENV 305-Heat and Mass Transfer*

You will investigate the characteristics of the atmosphere, gaseous and particulate air pollution, their sources, effects and controls, and the various methods of measurement, photochemical smog and strategies used to control emissions. Additionally, you will take into consideration various economic issues as defined by welfare effect, public health, and safety issues caused by air and noise pollution within your indigenous areas and prepare solutions of the same.

**ENV 425. Groundwater Hydraulics and Hydrology — (3 units)**

*Prerequisite: ENV 410 Water Quality Measurements.*

Groundwater flow, Darcy Law, steady and unsteady flows, confined and unconfined flows, pumps and pump systems.

**ENV 430. Principles of Water and Wastewater Engineering — (3 units)**

*Prerequisite: ENV 401 Environmental Engineering.*

Water and wastewater characteristics; physical, chemical and biological methods of treatment.

**ENV 440. Hazardous Waste Management — (3 units)**

*Prerequisite: ENV 402 Thermodynamics of Processes.*

Overview of industrial processes which produce hazardous wastes. Principles of toxicology. Federal and state standards. Storage, handling and transport of hazardous waste, and waste minimization.

**ENV 520. Transport Phenomena — (3 units)**

*Prerequisites: Graduate Standing, ENV 402 Thermodynamics of Processes.*

Fundamentals of momentum, heat and mass transfer are discussed. Application of fluid mechanics to problems of pollutant transport. Heat and mass transfer operations used in solution of environmental problems.

**ENV 530. Environmental Health Risk Assessment — (3 units)**

*Prerequisite: Graduate Standing.*

Topics such as hazardous waste, risk assessment, ground-water contamination, indoor air quality, acid deposition, global climate change, and stratospheric ozone depletion are studied in this course. Qualitative and quantitative aspects of treatment technologies are discussed. Engineering models are based on decision analysis and probabilistic methods.

**ENV 550. Combustion and Air Pollution Control — (3 units)**

*Prerequisites: Graduate Standing, ENV 402 Thermodynamics of Processes.*

Principles necessary to understand the sources and control of air pollutants, generation of pollutants in combustion systems, the internal combustion engine, control techniques for particulate and gaseous pollutants.

**ENV 560. Chemical Kinetics — (3 units)**

*Prerequisites: Graduate Standing, ENV 402 Thermodynamics of Processes.*

Applications will focus on water and wastewater engineering and a little on air pollution engineering. This course will cover some basic principles of reaction engineering through emphasis on process dynamics in aqueous and gaseous systems.

### **ENV 580. Advanced Water and Wastewater Treatment — (3 units)**

#### ***Prerequisite: Graduate Standing.***

In-depth discussion of water and wastewater treatment processes; chemical coagulation, flocculation, sedimentation, filtration and absorption and removal methods.

### **ENV 590. Solid Waste Management — (3 units)**

#### ***Prerequisite: Graduate Standing.***

Human activities generate waste materials that are often discarded because they are considered useless. These wastes are normally solid. The word waste suggests a material that is useless and unwanted. Some waste materials can be reused, and if managed properly, can become a resource for industrial production or energy generation. Waste management has become a significant problem of our time because the American way of life produces enormous amounts of waste. Interestingly, most people want to preserve their lifestyle, while also protecting the environment and public health.

While there have been no revolutionary breakthroughs in waste management options, there has been a steady advance in the technologies necessary to handle solid waste materials safely and economically. Improved management of hazardous waste and the emergence of cost-effective integrated waste management (IWM) systems, with greater emphasis on waste reduction and recycling, have reduced many of the previous problems associated with solid waste management. Also, improved air pollution control devices on incinerators have proven to be effective, and a better understanding of hazardous materials found in solid waste has led to management options that are considered environmentally acceptable.

In this course the following topics will be covered:

- federal and state legislation
- characterization of solid waste streams
- the planning process for municipal solid waste (MSW)
- methods for reducing the amount of toxicity of solid waste
- collection and transport of solid waste
- recycling and markets for recycled products
- household hazardous wastes and other special wastes
- composting, incineration, and landfilling
- siting and costs of MSW facilities.

The overall goal of IWM must be the reduction of the total environmental impact resulting from waste, its handling recycling, treatment or final disposal. Reducing the input to waste management system by increasing the material efficiency of the economy is the preferred long-term option.

### **Mechanical Engineering**

#### **ME 401. Fluid Mechanics — (3 units)**

#### ***Prerequisite: ENGR 304 Thermodynamics I***

This course introduces the fundamentals of fluid mechanics, and their application to problems commonly encountered by mechanical and civil engineers. Fluids and their behavior are fundamentally important to many mechanical devices and systems found in our modern world. Perhaps the most familiar example is the plumbing system in your home, which is used to distribute water for drinking, cooking, and cleaning. Many of us have air conditioning in our homes, which involve the movement of at least two fluids (the air being cooled and the refrigerant which passes through the compressor, condenser, expansion valve and evaporator). Just a few of the many engineering systems which depend on the movement of fluids for their operation include steam power plants, internal combustion engines, rocket engines, aircraft, hydraulic turbines used for electrical generation, and wind turbines.

Three fundamental equations provide the foundation for fluid mechanics: conservation of mass, conservation of momentum, and conservation of energy. For obvious reasons they are known as the conservation equations.

These equations can be written for finite control volumes or differential elements. This course focuses on the control volume forms of the conservation equations and their application to common engineering problems.

**ME 402. Fluid Dynamics — (3 units)**

*Prerequisite: ME 401 Fluid Mechanics*

Continuation of Elementary Fluid Mechanics. Study of potential flow and boundary layer theory. One-dimensional compressible flow with area change, friction, heating, shock waves, and Prandtl-Meyer expansions.

**ME 403. Heat Transfer — (3 units)**

*Prerequisite: ENGR 304 - Thermodynamics I or equivalent*

This course provides an introduction to the three modes of heat transfer - conduction, convection, and radiation. Emphasis is given to developing equations for common engineering problems.

The principles and applications of heat transfer are relevant to many modern devices. Common everyday examples include the personal computer, the space heating and cooling systems at your home and workplace, automobile engine cooling systems, and power plants for electrical generation. The engineer's task is often to ensure that the operating temperature of certain components does not exceed or fall below safe limits, which requires that heat be efficiently dissipated or absorbed. Cost, space, and weight are additional factors which influence most designs involving heat transfer.

**ME 404. Applied Convective Heat Transfer — (3 units)**

*Prerequisite: ME 403 Heat Transfer*

Continuation of ME 403 Heat Transfer. Heat exchanger design. Review and application of working correlations for high speed flows, evaporation, condensation and boiling.

**ME 405. Thermodynamics II — (3 units)**

*Prerequisite: ENGR 304 Thermodynamics I*

Continuation of Thermodynamics I. Applications of thermodynamic principles to power and refrigeration cycles. Introduction to psychrometry, reactive and non-reactive mixtures, and combustion analysis.

**ME 406. Statics and Strength of Materials II — (3 units)**

*Prerequisite: ENGR 303 Statics and Strength of Materials I*

Design of beams and columns, stress concentrations, statically indeterminate problems, and energy methods.

**ME 407. Machine Design Fundamentals — (3 units)**

*Prerequisites: ENGR 303 Statics & Strength of Materials I, ME 406 Statics & Strength of Materials II*

Design against fatigue, design of fasteners, welded and bonded joints, springs, bearings, gearing, clutches, brakes, couplings, flexible mechanical elements, and shafting.

**ME 408. Advanced Strength and Applied Stress Analysis — (3 units)**

*Prerequisite: ME 406 Statics and Strengths of Materials II*

The topics discussed in this course are treated by going a step or two beyond elementary mechanics of materials. The course provides advanced methods for the stress analysis and design of various load-bearing structures and machines. Stress analysis ensures that each element of a given system will not fail to meet structural requirements of design throughout the specified life of the system.

**ME 409. Mechanical Vibrations — (3 units)**

*Prerequisite: ENGR 201 Computer Programming for Engineers, ENGR 306 Engineering Dynamics*

ME 409 is an analysis of systems in vibratory motion. The course covers response to initial and forced

excitations; modal analysis; and one, two, and multiple degree of freedom systems. ME 409 is also an introduction to continuous systems and to applications of vibration analysis, including isolation, absorption, and damping. Important engineering special cases are covered, including axial, bending, and torsional vibratory motion.

**ME 410. System Dynamics — (3 units)**

*Prerequisite: ENGR 306 Engineering Dynamics*

Modeling of dynamic engineering systems and various energy domains using bond graphs, block diagrams, and state equations. Analysis of response of system models.

**ME 411. Experimental Methods for Engineers — (3 units)**

*Prerequisite: ENGR 305, Basic Circuit Analysis or equivalent*

*Microsoft Excel and PowerPoint will be required to complete some of the assignments.*

Experimentation is an important tool for mechanical engineers. The behavior of some physical systems must be evaluated experimentally since it is too complex to be adequately explained through theoretical analysis. The monitoring and control of processes and operations require that key performance variables be accurately measured. Many prototype designs must be tested for safe operation before they can be sold to the public. In fact, it is difficult to imagine any product designed by engineers that will not require some experimentation during its development. To plan and perform experiments, engineers must understand the fundamentals behind the measurement of physical quantities such as temperature, pressure, strain, and motion, as well as appropriate mathematical techniques for interpreting the measurement results.

After completing this course, a student should be able to plan and perform an experiment related to an engineering topic of their interest. The experiment process includes choosing sensors and data acquisition hardware and software for collecting the data; properly analyzing the data using statistics and error propagation techniques; and effectively communicating the results in various formats (e.g. written reports and PowerPoint presentations).

**ME 412. Computational Fluid Dynamics (CFD)— (3 units)**

*Prerequisites: ME 309 Numerical Analysis of Engineering Problems, ME 402 Fluid Dynamics*

The course introduces the use of numerical methods for solving the conservation equations of mass, momentum and energy. Application to a variety of practical problems using programs written by the professor. Additional programming by the student is also required.

**ME 503. Advanced Fluid Dynamics — (3 units)**

*Prerequisites: Graduate Standing, ME 402 Fluid Dynamics or equivalent*

Generalized one-dimensional compressible flow, unsteady and two-dimensional compressible flows, method of characteristics, compressible boundary layers. Application of computational codes to practical problems.

**ME 504. Advanced Convective Heat and Mass Transfer — (3 units)**

*Prerequisites: Graduate Standing, ME 404 Applied Convective Heat Transfer or equivalent*

Theory of free and forced convection in laminar and turbulent flows. Two-phase heat transfer. Mass transfer applications, including transpiration cooling, condensation and evaporation.

**ME 505. Advanced Thermodynamics — (3 units)**

*Prerequisites: Graduate Standing, ME 405 Thermodynamics II or equivalent*

Advanced topics in thermodynamics emphasizing real fluid behavior and modeling. Interaction between

thermodynamics, chemical kinetics, fluid mechanics and transport processes. Application to real engineering systems in the student's area of interest will be stressed.

**ME 506. Kinematics of Mechanisms — (3 units)**

***Prerequisites:*** Graduate Standing, ENGR 501 Graduate Engineering Analysis

Machine design is a creative process. The designer is to identify the alternatives to satisfy the needs of the customer and to quantify and evaluate the alternatives. This course offers some of the tools of the designer. It includes an introduction to the study of motion of constrained mechanism in machine systems. The objective is to develop the students understanding of basic machine design concepts, such as linkages, cams, sliders, crank and rocker, offset crank slider, universal joints, etc. The combination of several of these elements in machine drive trains and the resulting static and dynamic forces will also be studied.

**ME 507. Dynamics of Machines — (3 units)**

***Prerequisites:*** ENGR 501 Graduate Engineering Analysis, ME 506 Kinematics of Mechanisms

Study of forces, motion and inertia in machines. Analysis of linkages, cams, rotor dynamics, reciprocal and rotational balancing, whirl modes and orbits, signature analysis of machine elements. Application to problems of student interest.

**ME 508. Advanced Design and Parametric Modeling — (3 units)**

***Prerequisite:*** ME 406 Static and Strength of Materials II

The main objective of this course is to provide the engineering student with the ability to create conceptual designs of solids through parametric solid modeling. Students will learn how to use mechanical design automation software to build parametric models of parts and assemblies and learn how to create the associated detailed drawings.

**ME 509. Control of Mechanical Systems — (3 units)**

***Prerequisites:*** Graduate Standing, ENGR 306 Engineering Dynamics

Study of classical feedback control theory. Applications to mechanical, hydraulic and pneumatic systems. Consideration of stability criteria and system sensitivity.

**ME 510. Design and Control of Dynamic Systems — (3 units)**

***Prerequisite:*** ME 509 Control of Mechanical Systems

Design and control of mechanical systems. Time-domain and state space methods integrated into the design of dynamic processes. Application to automotive, aircraft, spacecraft, robots and related mechanical/aerospace systems. Digital simulations.

**ME 511. Graduate Numerical Analysis — (3 units)**

***Prerequisite:*** ENGR 201 - Computer Programming For Engineers (or equivalent); proficient in at least one programming language such as FORTRAN, PASCAL, C or C++; ME 309 Numerical Analysis of Engineering Problems (or equivalent). Also recommended but not required is ENGR 501 - Graduate Engineering Analysis.

This course is the graduate extension of ME 309 or an equivalent introductory under-graduate numerical analysis course. It focuses on applications more than theoretical analysis but involves more fundamentals compared to ME 309. The applications are selected from general engineering such as those covered in ENGR 501. The contents will include the general topic of solution of systems of equations (linear or nonlinear), Eigenvalue problems, functional approximations, advanced curve fitting techniques, and solutions of ordinary and partial differential equations.

## **Quality Assurance Science**

### **QAS 410. Reliability Methods — (3 units)**

***Prerequisite: QAS 204 Fundamentals of Statistical Process Control.***

A study of reliability methods with emphasis on the principles of reliability design, prediction methods, maintainability and availability, system reliability, and analysis of reliability data. Role, methodologies, and implementation of Failure Mode and Effects Analysis (FMEA) in design, process and preventive action.

### **QAS 420. Geometric Dimensioning and Tolerancing — (3 units)**

***Prerequisite: QAS 206 Blueprint Reading.***

A study of geometric dimensioning and tolerancing in accordance with ANSI Y14.5 and ASME Y 14.5M - 1994. Standard U.S. methodology and symbology are practiced and demonstrated to be compatible with international standard ISO 1101.

### **QAS 430. Experimental Design — (3 units)**

***Prerequisite: QAS 204 Fundamentals of Statistical Process Control.***

A study of Experimental Designs used in quality control. This course emphasizes the basic principles of Experimental Designs and focuses on classical and modern designs along with proper design selection.

### **QAS 440. ISO Quality Systems — (3 units)**

***Prerequisite: QAS 202 Quality Control.***

A study of modern day Quality Assurance Systems with an emphasis on preparation and planning for system registration based on the ISO 9000 standards. Other standards introduced are: QS 9000 (automotive), AS 9000 (aerospace), Q19000 (Boeing), GMP (FDA), TL 9000 (telecommunications), and ISO 14000 (environmental).

### **QAS 460. Process Control and Capability — (3 units)**

***Prerequisite: None.***

A detailed study of procedures and methods for performing machine and process capability studies, supplier capability studies, process and machine improvement, test and process troubleshooting and process capability database management.

### **QAS 470. Graduate Statistical Process Control Methods and Applications — (3 units)**

***Prerequisite: QAS 204 Fundamentals of Statistical Process Control.***

This course builds on the fundamentals of Statistical Process Control (SPC) Methods. Case studies will be used to show how SPC methods are applied in organizations. Hands-on use of Microsoft Excel or some other statistical software package will be required.

### **QAS 480. Six Sigma Methods — (3 units)**

***Prerequisite: QAS 202 Quality Control***

***Experience of at least six months working in Quality or Statistics will be helpful but not mandatory.***

This course provides a comprehensive review of Six Sigma Methods, focusing on quality and continuous improvement in all aspects of business operation. Critical to Quality (CTQ), DMAIC Methodology, and Design for Six Sigma (DFSS). Case studies, critical thinking activities and review questions will be used to illustrate major concepts.

### **QAS 516. Taguchi's Experimental Design Methods — (3 units)**

***Prerequisite: ENGR 502 Graduate Engineering Statistics or MSCI 585 Graduate Business Statistics.***

An in-depth study of Dr. Genichi Taguchi's experimental design methods and quality design and analysis techniques. An emphasis is placed on Mechanical and Electrical product and process improvements derived from 22 case studies of Taguchi's methods. Planning of experiments for best strategy and objectives is stressed.

An overall emphasis is placed on providing engineering quality by design.

**QAS 518. Software Reliability: Management, Methods and Mathematics — (3 units)**

*Prerequisite: ENGR 502 Graduate Engineering Statistics or MSCI 585 Graduate Business Statistics.*

A study of reliability concepts as related to software design and implementation including mathematics, management and methods. Reliability prediction, confidence assessment, system, safety, availability and maintainability principles studied along with the related distributions, and failure modes and effects analysis. What makes software reliability different from that found in standard engineering practice is the nature of failures to be found in software. Once found, a failure is no longer a failure, which implies that failures cannot be considered random variables. This introduces new approaches to software failures with some attempts to relate some of the processes to traditional reliability. Hence, the need for an in-depth knowledge of standard reliability distributions and methods.

**Master's Project - Required 6 Units**

**MSE 599A. Master's Project (Research and Development) — (3 units)**

The purpose of this course is to teach the student how to apply research methods in their Master's Thesis. This includes selecting a research problem, developing a thesis proposal, as well as instruction on the completion of a thesis after the topic has been approved by the thesis advisor and the thesis committee. Various kinds and types of research will be studied. Systems for gathering and reporting data as well as statistical processing of data will be covered

Students will develop a **Final Project**, consisting of a **preliminary proposal** for Thesis Committee Approval and **development of the first three chapters** of the thesis.

**MSE 599B. Master's Project (Final Report) — (3 units)**

Continuation of the project defined in MSE 599A. Monthly progress reports submitted to the faculty advisor will be required to ensure a timely completion of the research. The student will prepare a formal final report describing the results which will be submitted to the faculty advisor and the graduate committee for approval.

## **Bachelor of Computer Science Degree Program**

The engineering programs at the undergraduate and graduate levels are designed to prepare students for rewarding careers in these fields. Graduates are expected to possess sufficient knowledge to achieve professional certification (e.g., registration as a Professional Engineer), if they choose to do so. Expected outcomes for each degree program are based on guidelines established by professional organizations such as the *Accreditation Board for Engineering and Technology* (ABET).

### **Bachelor of Computer Science Program Objectives:**

The BCS program objective is to provide a formal body of knowledge for students interested in careers in the ever-evolving computer industry. The curriculum includes a foundation in basic sciences, which includes courses related to both software and hardware fundamentals, and selected electives to allow students to specialize in areas of their interest.

### **BCS Program Learning Outcomes**

- An understanding of algorithms and their implementation with programming languages and an ability to program proficiently in at least one higher-level language.
- An understanding of computer organization and architecture and the principles of operating systems.
- An understanding of data structures and file systems.
- An ability to design software to solve a specific problem, and evaluate the software's performance.
- Knowledge of calculus, discrete mathematics, probability, and statistics.
- An understanding of a laboratory science and application of the scientific method.
- An ability to communicate effectively.

### **BACHELOR OF COMPUTER SCIENCE DEGREE PROGRAM REQUIREMENTS**

A High School Diploma or GED equivalent is required for admission. Applicants to the Bachelor of Computer Science degree program are expected to have a background in algebra, plane geometry, trigonometry, physics and chemistry. If an applicant lacks this background, pre-requisite courses will be assigned from the CNU Basic Sciences Curriculum.

The Bachelor of Computer Science degree program requires satisfactory completion of 121 units of academic work with a cumulative GPA of 2.0 or better in the following areas:

General Education	30 units (lower division)
Basic Sciences	25 or 26 units (lower division)
Computer Science Core	45 units (lower/upper division)
Computer Science Electives	18 units (upper division)
Capstone Project	3 units (upper division)
Minimum Total	121 units

The Computer Science core and elective courses consist of a mixture of guided instruction and lab formats. Laboratory courses in Computer Science are those courses in which the majority of the time is spent writing and using software on a personal computer. The student will need to acquire access to a PC or Macintosh computer

capable of supporting a programming language environment such as C or Visual Basic. Access to the Internet and an e-mail address are required.

Courses are offered in a systematic manner, i.e., where applicable, prerequisites will be completed before the student can enroll in subsequent high-level offerings.

**General Education — 30 units (Lower Division)**

Students pursuing a Bachelor of Computer Science degree must complete a breadth requirement of 30 General Education units. Students may elect to take the College-Level Examination Program (CLEP) exams to meet this requirement instead or in combination with courses. Credit given for General Education courses taken through CLEP exams is based on passing scores as determined according to the range of acceptable scores established by the American Council on Education (ACE). Students have the option to fulfill general education requirements by choosing courses related to the following subject areas:

- Communications (written/oral)
- Computation (quantitative reasoning/concepts)
- Social Science (history, sociology, economics, and politics)
- Computer Technology & Practice
- Humanities (literature, philosophy, language, culture, the arts)
- Life/Physical Sciences

**Basic Sciences (25-26 units)**

BSCI 101	Calculus I	3 units
BSCI 102	Calculus II	3 units
BSCI 103	Calculus III	3 units
BSCI 104	Ordinary Differential Equations	3 units
BSCI 105	Probability and Statistics	3 units
BSCI 113	Discrete Mathematics	3 units

Select Two

BSCI 206	Physics I Mechanics	4 units: 3 guided instruction/1 lab
BSCI 207	Physics II Electricity and Magnetism	4 units: 3 guided instruction/1 lab
BSCI 208	Chemistry I	4 units: 3 guided instruction/1 lab
BSCI 209	Chemistry II	3 units

**Computer Science Core**

CS 200	Fundamental Concepts of Information and Computer Technology	3 units
CS 201	Introduction to Algorithms	3 units: 2 guided instruction/1 lab
MIS 202	Principles of Management Information Systems	3 units
CS 202B	Programming in Visual Basic	3 units
CS 202C	Computer Programming in C	3 units
CS 202J	Introduction to HTML and Java	3 units
CS 203	Data Structures and Analysis of Algorithms	3 units
CS 204	Introduction to Computer Architecture	3 units
CS 205	Computer Systems and Interfaces	3 units
CS 208	File and Database Systems	3 units
CS 209	Principles of Programming Languages	3 units
ENGR 307	Introduction to Logic Design	4 units: 3 guided instruction/1 lab
CS 306	Introduction to Software Engineering	3 units
CS 307	Introduction to Operating Systems	3 units
CS 310	Network Principles	3 units
ME 309	Numerical Analysis of Engineering Problems	3 units
MIS 301	Business Data Communications	3 units
MIS 305	Systems Development I	3 units: 2 guided instruction/1 lab

## Elective Areas

- Computer Engineering
- Computer Science

### Computer Science Electives (Select 18 units)

CE 430	Computer Design	3 units
CE 440	Microprocessor Design	3 units
CS 302	Programming in Java	
CS 305	Computer Organization and Assembly Language	3 units
CS 411	Artificial Intelligence	3 units
CS 412	The Unix Environment for Programmers	3 units: 2 guided instruction/1 lab
CS 413	Programming Languages and Software Methodology	3 units: 2 guided instruction/1 lab
CS 414	Principles of Operating Systems	3 units
CS 415	Object-Oriented Programming Languages	3 units
CS 416	Graphics and Computers	3 units
CS 417	The Windows Environment	3 units
CS 418	Graphical User Interfaces	3 units
CS 419	Advanced GUI (Graphical User Interfaces) Concepts	3 units
QAS 207	Software Quality Assurance	3 units

### Capstone Project 3 units (Upper division)

A Capstone Project is required which begins with an approved proposal on a relevant and current subject. The Capstone Project should demonstrate the student's ability to apply the principles of Computer Science to a practical problem. The Capstone Project will entail one trimester of work requiring 4 hours of practicum per week for 15 weeks and culminate in a formal report.

CS 499	Capstone Project	3 units
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### Course Descriptions

#### **BSCI 101. Calculus I — (3 units)**

*Prerequisite: BSCI 100C Pre-Calculus or equivalent.*

The course will cover analytical geometry and elementary calculus, functions of one variable, differentiation, and integration. Course includes college-level algebra and elements of trigonometry.

#### **BSCI 102. Calculus II — (3 units)**

*Prerequisite: BSCI 101 Calculus I.*

Covers exponential and logarithmic functions, trigonometric and inverse trigonometric functions, integration techniques, sequences, infinite series, power series, conic sections.

**BSCI 103. Calculus III — (3 units)**

*Prerequisite: BSCI 102 Calculus II.*

Course will cover plane curves, parametric equations, polar coordinates, vectors, solid analytic geometry, functions of several variables, partial differentiation, and multiple integration.

**BSCI 104. Ordinary Differential Equations — (3 units)**

*Prerequisite: BSCI 103 Calculus III*

This course covers the essentials of Ordinary Differential Equations. The main reason for solving many differential equations is to try to learn something about an underlying physical process that the equation is believed to model. Examples include exponential decay and growth models, spring-mass systems, and electrical circuits.

**BSCI 105. Probability and Statistics — (3 units)**

*Prerequisite: BSCI 101 Calculus I or equivalent.*

Covers concepts useful to understanding the nature of probability, its applications to descriptive and inferential statistics, and elementary statistical procedures. Includes conditional probabilities, discrete and continuous probability distributions; expected values; calculations for the number of permutations and combinations; binomial, normal, and Poisson distributions; elementary sampling theory; measures of central tendency and variability; confidence intervals; hypothesis testing, and statistical decision theory and errors.

**BSCI 113. Discrete Mathematics — (3 units)**

*Prerequisite: BSCI 100B Algebra II or equivalent.*

Elements of discrete mathematics that have applications to Computer Science; methods of proof including mathematical induction. Topics include logic, sets, relations, graphs, trees, Combinatorial and Boolean algebra.

**BSCI 206. Physics I (Mechanics) — (4 units: 3 guided instruction/1 lab)**

*Prerequisite: BSCI 102 Calculus II.*

BSCI 206 Physics I (Mechanics) covers fundamentals of Newtonian Mechanics and the physics of fluids, oscillations (including mechanical waves and sound), and addresses topics of heat and thermodynamics.

**BSCI 207. Physics II (Electricity and Magnetism) — (4 units: 3 guided instruction/1 lab)**

*Prerequisites: BSCI 103 Calculus III, BSCI 206 Physics I.*

Introduction to Electricity and Magnetism and Optics. Covers basic concepts regarding the physical behavior of electrically charged bodies, magnetic and electric fields; reflection and refraction of light; interference and optical instruments.

**BSCI 208. Chemistry I — (4 units: 3 guided instruction/1 lab)**

*Prerequisites: High school chemistry, BSCI 100B Algebra II.*

This course is a 4 unit general engineering course that is a requirement for all engineering degrees. Chemical principles such as reactivity, stoichiometry, thermochemistry, atomic theory including bonding and kinetic theory, and gas laws will be covered.

CyberChem is an electronic learning tool that presents the basic concepts appropriate for a college-level introductory course in chemistry. Chemical principles are presented in a textbook and multimedia format using text with animations and videos with accompanying sound, interactive experiments, quizzes, and a problem solver with hints and solutions. The laboratory component of the course is comprised of a variety of simulated lab experiments that are found within CyberChem in a section called CyberLabs.

**BSCI 209. Chemistry II — (3 units)**

***Prerequisite: BSCI 208 Chemistry I.***

This course is a three unit general engineering course that is a continuation of Chemistry I. Chemical thermodynamics, equilibria, acid and base chemistry, electrochemistry, metal and nonmetal descriptive chemistry, nuclear chemistry and organic chemistry will be covered. CyberChem is an electronic learning tool that presents the basic concepts appropriate for a college-level introductory course in chemistry. Chemical principles are presented in a textbook and multimedia format using text with animations and videos with accompanying sound, interactive experiments, quizzes, and a problem solver with hints and solutions. The laboratory component of the course is comprised of a variety of simulated lab experiments that are found within CyberChem in a section called CyberLabs.

**CS 200. Fundamental Concepts of Information and Computer Technology — (3 units)**

***Prerequisite: None.***

This course is an introduction to the fundamentals of computers and a study of their basic logical function as it applies to technical systems. A short history of early computers and the researchers who were responsible for them is presented, including various types of codes that are all based on the binary and other modern numbering systems. The materials will introduce the student to various computer concepts and circuits, the central processing unit (CPU), and memory units. The student is introduced to logic gates, Boolean theory, and other numbering systems including binary, quaternary, octal, and hexadecimal. The CPU is further examined to illustrate the use of registers, program counter, and stack pointer. Assembly language programming is introduced and shows the relationship between it and machine code.

**CS 201. Introduction to Algorithms and Programming — (3 units: 2 guided instruction/1 lab)**

***Prerequisite: CS 200 Fundamental Concepts of Information and Computer Technology or consent of professor.***

Introduction to the discipline of computer science using a high level language. Provides an overview to the programming process and program design techniques. Topics include algorithm development, control structures, procedures, and elementary data structures. Methodologies for program design, development, style, testing and documentation are also included.

**MIS 202. Principles of Management Information Systems — (3 units)**

***Prerequisite: You will need to have access to a computer with an Office Suite (Word Processing, Spreadsheet and Data Base Management System), E-mail and Internet. The Microsoft Office Suite is preferred, but other Office Suites will do.***

The principles of computer-based management information systems (MIS) are introduced and discussed. In the process of doing this, the managerial/organizational information needs are given high priority. The role of information systems in management, including current professional practices and methodologies, are described. Topics include the general systems theory, decision theory, organizational models, types and benefits of information systems, systems planning and development, and management and control of information systems.

**CS 202B. Programming in Visual Basic — (3 units)**

***Prerequisite: CS 201 Introduction to Algorithms and Programming.***

Syntax, control and data structures of the Visual Basic language are covered. Features such as arrays, functions, and loops are presented throughout various programming assignments. Graphics, error handling, debugging and sequential file handling will also be covered.

### **CS 202C. Computer Programming in C — (3 units)**

***Prerequisite: CS 201 Introduction to Algorithms and Programming.***

Syntax, control and data structures of the C language are covered. Critical features of the language including arrays, functions, pointers, structures and files are presented throughout various programming assignments.

### **CS 202J. Introduction to HTML and Java — (3 units)**

***Prerequisites: Since this is an introductory course in HTML and Java, there are very few formal prerequisites. It is beneficial for the student to have had some basic experience in programming languages and in using the Internet before taking this course, but everything needed is provided here for pure beginners as well.***

This course serves as a general introduction to Web page design using HTML and Java at a high level. Topics discussed include the purposes and capabilities of HTML and Java (their similarities and differences), fundamental text, image, and table formatting commands, web page linking, and inclusion of Java to achieve interactive Web pages. The student should be able to gain a high-level understanding of the main capabilities of HTML and Java, although only a subset of the available commands are emphasized and examined in this introductory-level course.

### **CS 203. Data Structures and Analysis of Algorithms — (3 units)**

***Prerequisites: CS 201 Introduction to Algorithms and Programming, BSCI 101 Calculus I, BSCI 113 Discrete Mathematics.***

***Suggested Skills: C++, Mathematical Summation and Basic functions.***

You will learn a number of different data structures such as: lists, stacks, queues, and trees. Along with data structures, you will also study a wide range of programming techniques to solve larger and more complex problems.

### **CS 204. Introduction to Computer Architecture — (3 units)**

***Prerequisite: CS 200 Fundamental Concepts of Information and Computer Technology or demonstration of mastery of material.***

In addition, experience with computers is required, and knowledge of how to perform the following tasks:

- Navigate around Windows 98/2000/XP, i.e. use scroll bars, resize and position windows.
- Download and install programs and other applications or compressed files.
- Use of Microsoft Word, PowerPoint Presentations, and Adobe Acrobat reader.
- Basic use of and familiarity with PC user hardware and software features.
- Functional knowledge of e-mail, Web browsing and conducting an Internet search.

This course serves as a general introduction to computer organization at the systems architectural level. Topics include data representation, processor and data storage technology, systems integration, I/O theory, application development, operating systems, networking, and system administration. The curriculum will emphasize and examine these along with other topics and is intended to provide an understanding of the major components of a computer system for implementation, maintenance and management objectives. This course also discusses the tradeoffs that are associated with implementing and using various design and planning techniques while at the same time meeting typical industry price/performance and many other constraints.

### **CS 205. Computer Systems and Interfaces — (3 units)**

***Prerequisite: CS 204 Introduction to Computer Architecture.***

Extension of basic digital computer topics to a more advanced level. Topics include advanced addressability, virtual memory, cache memory, multiprocessor. Multicache architectures, device management, loaders and linkers, input/output control and techniques for interrupt handling are also included.

**CS 208. File and Database Systems — (3 units)**

*Prerequisites: CS 204 Introduction to Computer Architecture, CS 205 Computer Systems and Interfaces. Students must have Microsoft Access 2000 or Microsoft Access XP version and know how to create PowerPoint slides.*

An introduction to file systems with an emphasis on organization techniques including sequential, indexed, indexed sequential, direct, inverted and tree structures. An overview of basic database models, including the relational data model. Database topics include data definition languages, data manipulation languages and normalization techniques.

**CS 209. Principles of Programming Languages — (3 units)**

*Prerequisite: CS 203 Data Structures and Analysis of Algorithms.*

Survey of major developments in programming languages. Introduction to contemporary programming paradigms and their related languages, including procedural, functional, logic, and object-oriented languages (C++). The mechanisms for sequence control, data structure implementation and run-time storage management within each type of language are discussed.

**ENGR 307. Introduction to Logic Design — (4 units: 3 guided instruction/1 lab)**

*Prerequisite: BSCI 102 Calculus II (3 Units).*

This course is designed for you to understand the implementation of the digital logic in a variety of digital systems. The course provides various methods and techniques suitable for a variety of digital system design applications. It also covers all aspects of digital systems from the electronic gate circuits to the complex structure of microprocessors. You will learn the basic concepts, such as Binary and related number systems, codes, Boolean algebra, combinational logic, and techniques of minimization, simple arithmetic operations, memory elements, flip-flops, digital systems organization, used in the design and analysis of digital systems and the principles of digital computer organization and design.

**CS 306. Introduction to Software Engineering — (3 units)**

*Prerequisites: CS 203 Data Structures and Analysis of Algorithms, CS 205 Computer Systems and Interfaces. It is expected that the student will have experience, either professionally or through coursework, in the programming of computer programs. This implies expertise in using the computer as well as in one or more computer programming languages such as Visual Basic, COBOL, JavaScript, Java or C/C++. Student is also expected to be proficient in utilizing the Internet to perform research.*

Software Engineering is the art and science of building a computer system. Computer systems are collections of computer programs - all having a common theme. Creation of systems is a stepped procedure utilizing a series of procedures and technologies via the SDLC (Systems Development Life Cycle). The student will learn all components of the SDLC including:

- How to determine feasibility of a proposed computer system
- How to analyze a system's requirements
- How to develop a complete technical specification
- Translating the specification to program code
- Managing the development process
- System testing
- Implementing the system
- Maintaining the system

In addition, the student will learn about the concepts of productivity and quality and measuring the process of software engineering.

**CS 307. Introduction to Operating Systems — (3 units: 2 guided instruction/1 lab)**

*Prerequisites: CS 202C Computer Programming in C, CS 205 Computer Systems and Interfaces.*

An overview of operating systems including their history and evolution. Examination of typical problems associated with implementing such systems. Topics include multitasking, interrupts, concurrency, deadlock, and scheduling.

**CS 310. Network Principles — (3 units)**

*Prerequisite: CS 307 Introduction to Operating Systems*

*Students should have a basic knowledge of computer systems, communication protocols and internet researching skills.*

An introduction to the study of computer networks. Current methods and practices in the use of networks are examined. Other topics include physical and architectural elements, information layers, and network tools. Various architectures are compared and contrasted.

This course also examines a variety of network technologies and concepts, including: analog and digital telephony, voice digitization, digital transmission, multiplexing, switching, modulation techniques, synchronization control, network management, fiber-optic systems, mobile systems, ATM, digital subscriber access and traffic analysis.

The focus in this course will be on understanding the underlying concepts and requirements relevant to these technologies, as well as implementation issues and practices.

**ME 309. Numerical Analysis of Engineering Problems — (3 units)**

*Prerequisites: ENGR 201 Computer Programming for Engineers or Equivalent, BSCI 104 Ordinary Differential Equations*

This course encapsulates algorithmic mathematics in a form that can be easily applied to a wide range of disciplines, in courses such as Digital Signal Processing, Control Theory, Linear Algebra, Numerical Methods, Applied Mathematics, and Advanced Engineering Mathematics. These algorithms are implemented in MATLAB, a programming language, which offers a rich set of capabilities to solve problems in engineering, scientific computing, and mathematical disciplines.

**MIS 301. Business Data Communications — (3 units)**

*Prerequisites: MIS 202 – Principles of Management Information Systems or permission of your professor.*

An introduction to the concepts and technology of on-line and network-based information systems for business data communications. Emphasizes management considerations, requirements analysis, capacity planning, micro-mainframe connectivity, and decentralized transaction processing. Includes the use of both management cases and laboratory projects. This is the first class of two classes for a complete course in Modern Data Communication and Networks.

**MIS 305. Systems Development I — (3 units: 2 guided instruction/1 unit lab)**

*Prerequisite: MIS 202 Principles of Management Information Systems.*

Use information systems methodologies to solve enterprise-wide managerial and organizational problems. Students will use structured systems development methodologies to develop a simple single-user system, including using a database. Topics include database design and management systems, standard development life cycle, and development with prototyping techniques.

**CE 430. Computer Design — (3 units)**

*Prerequisite: ENGR 307 Introduction to Logic Design.*

General-purpose digital computers, hardware modules, control and arithmetic units, computer organization, and introduction to fault analysis.

**CE 440. Microprocessor Systems Design — (4 units: 3 guided instruction/1 lab)**

***Prerequisite: ENGR 307 Introduction to Logic Design.***

Introduction to the architecture, hardware, and software of a variety of microprocessors, including advanced RISC microprocessors. Major emphasis is a design project. The course will present microprocessor architecture, memory hierarchy, and pipelining. The Intel 80X86 and Motorola 68000 processors will be covered with emphasis on addressing modes and instruction sets. Various RISC processors will also be covered.

**CS 302. Programming in Java — (3 units)**

***Prerequisite: CS 202J Introduction to HTML and Java or equivalent***

This language-intensive course builds upon the introductory course to cover the most advanced language features and concepts. The conceptually broad and demanding—but essential—concept of concurrent programming is covered in depth, allowing use within the graphical programming course to develop responsive graphical user interfaces (a primary use of concurrency within Java). Other intricate topics that are vital for industrial-quality code production are also covered. These topics include cloning, inner classes, and using non-Java code from within Java applications to access platform-specific facilities. The course concludes with an examination of how best to express common Design Patterns in Java in order to use the language to produce designs that make use of the design expertise formerly available only to a select few design “gurus”.

**CS 305. Computer Organization & Assembly Language — (3 units)**

***Prerequisite: CS 202C Computer Programming in C.***

Assembly language of the 80x86 and the Pentium CISC microprocessors. Number systems and number representations. 80x86 architecture and addressing modes. 80x86 instruction set: data transfer, program control, logic, strings, fixed-point binary arithmetic, procedures, and macros. Segments. Registers. Subroutines. Instruction execution timing. Decimal arithmetic. Floating-point arithmetic. 80x87 math coprocessor. Write assembly language programs on an Intel-based Windows PC.

**CS 411. Artificial Intelligence — (3 units)**

***Prerequisite: CS 203 Data Structures and Analysis of Algorithms.***

This course presents an introduction to the application of intelligent systems to practical problems. The intelligent systems considered in this course are expert systems, fuzzy systems, neural networks, evolutionary computation, hybrid algorithms, and data mining.

**CS 412. The UNIX Environment for Programmers — (3 units: 2 guided instruction/1 lab)**

***Prerequisite: CS 307 Introduction to Operating Systems.***

This course provides a technical overview of the UNIX operating system, providing hands-on experience with commands and files. Students will explore the basic structure, functions, and tools of the UNIX operating system. Topics include basic UNIX commands, files and directories, text editing, electronic mail, pipes and filters, shell environments, scripting and programming in the UNIX environment.

**CS 413. Programming Languages and Software Methodology (3 units: 2 guided instruction/1 lab)**

***Prerequisite: CS 306 Introduction to Software Engineering.***

This course introduces various fundamental concepts that are generic to essentially all programming languages. Topics include variables, expressions, statements, data types, scope, procedures, exception handling, and concurrency. This course also discusses the various tradeoffs associated with implementing and using these constructs in a language along with an in-depth analysis of the proper methodology by which they should be employed. Laboratory exercises enable you to explore these concepts and methodologies using a language you are familiar with.

**CS 414. Principles of Operating Systems — (3 units)**

*Prerequisites: CS 307 Introduction to Operating Systems, CS 412 The Unix Environment for Programmers.*  
An in-depth study of operating system principles, their descriptions, behavior, problems, and design. Concurrent processes, mutual exclusion, cooperation, deadlocks, resource allocation, storage management and protection are covered. Detailed study of specific systems.

**CS 415. Object-Oriented Programming Concepts — (3 units)**

*Prerequisites: CS 202C Computer Programming in C, CS 209 Principles of Programming Languages*  
*Although not a prerequisite for this course, having taken CS 202J Introduction to HTML and Java will be helpful and advantageous.*

This course covers principles of object-oriented design and programming. Topics include the role of objects, classes, methods, message passing, encapsulation, polymorphism, inheritance, and instantiation. Topics are illustrated using an object-oriented language such as Java, C++ or Smalltalk/V.

**CS 416. Graphics and Computers — (3 units)**

*Prerequisites: CS 306 Introduction to Software Engineering , BSCI 104 Ordinary Differential Equations.*  
Fundamental concepts of computer graphics. Graphic devices; graphics languages; interactive systems. Applications to science, engineering and business.

**CS 417. The Windows Environment (3 units)**

*Prerequisites: CS 201 Introduction to Algorithms and Programming, CS 203 Data Structures and Analysis of Algorithms, CS 209 Principles of Programming Languages.*

An overview of historical and current windowing environments and applications will be presented. An in-depth study of one such environment will include design and implementation of a software application to run in the selected environment.

**CS 418. Graphical User Interfaces Concepts — (3 units)**

*Prerequisite: CS 201 Introduction to Algorithms and Programming.*

*System Requirements:*

*Windows 2000 Professional; Windows 2000 Server; Windows XP Home Edition; Windows XP Professional; Windows server 2003 or later.*

This course explores the character and features of the event driven Visual Basic programming language to create sophisticated Visual Basic-based windows applications to solve problems. This course covers user interface management systems, database, and Internet programming.

**CS 419. Advanced GUI (Graphical User Interfaces) Concepts — (3 units)**

*Prerequisite: CS 418 Graphical User Interfaces Concepts.*

This is an extension of CS 418, Graphical User Interfaces, and examines advanced concepts such as on-line Help, Object Linking and Embedding (OLE), Open Data Base Connectivity (ODBC), Dynamic Link Libraries (DLL), Setup Wizard, client/server databases (SQL), custom controls, mixed-language programming, overlay structures, database programming, presentation graphics, math packages, and other concepts associated with the graphical design of user interfaces and event-driven programming. This is a project-driven course requiring student access to current popular programming software.

**QAS 207. Software Quality Assurance — (3 units)**

*Prerequisite: General Education requirement or permission of your professor.*

A study of industrial, commercial and government requirements for the assurance of Quality Software. Descriptions and evaluations of software quality processes are explored along with management and technical integration techniques used to produce software that meets the project's needs.

### **CS 499. Capstone Project — (3 units)**

**Prerequisites:** *Completion of core courses or equivalent and approval of faculty advisor.*

Independent design project in which the student selects a topic and with the approval of his/her faculty advisor, implements it by design, assembly, testing, and evaluation. Faculty Advisor approval is essential to the project conclusion.

## **Bachelor of Quality Assurance Science Degree Program**

The degree programs offered by the **College of Quality and Engineering Management** are designed to prepare students for rewarding careers in Quality Assurance Science and Engineering Management. Graduates are expected to possess sufficient knowledge to achieve professional certification (e.g., registration with ASQ or PMI) if they choose to do so. Expected outcomes for each degree program are based on guidelines established by the appropriate professional organizations such as the *American Society for Quality (ASQ)* and *Project Management Institute (PMI)*.

### **Bachelor of Quality Assurance Science Program Objectives:**

The **BQAS** degree program objective is to prepare the individual to be able to manage, plan, procure, design, and maintain an effective Quality Assurance Program within a company. The curriculum has also been designed to provide the fundamental course work and help prepare the student to sit for many of the *American Society for Quality (ASQ)* Certification Examinations. The program follows a general-purpose plan that provides flexibility of employment in industries throughout the country.

### **BQAS Program Learning Outcomes:**

- An ability to develop, operate, and manage quality control systems.
- An ability to acquire and analyze data using appropriate statistical methods to facilitate process analysis and improvement.
- An ability to apply modern problem solving tools and techniques necessary for quality tracking and improvement.
- An understanding of quality auditing and principles for meeting domestic and international standards.
- An ability to manage relations with customers and suppliers.
- An ability to communicate effectively.

### **BACHELOR OF QUALITY ASSURANCE SCIENCE Degree Program Requirements**

A High School Diploma or GED equivalent is required for admission. Applicants to the Bachelor of Quality Assurance Science degree program are expected to have a high school background in algebra, plane geometry, trigonometry, physics and chemistry. If an applicant lacks this background, prerequisite courses will be assigned from the CNU curriculum.

The Bachelor of Quality Assurance Science degree program requires satisfactory completion of 121 units of academic work with a cumulative GPA of 2.0 or better in the following areas:

General Education	30 units (Lower division)
Basic Sciences	22 units (Lower division)
Foundations of Quality Management	12 units (Lower division)
Quality Assurance Techniques	30 units (Upper division)
Quality Assurance Electives	24 units (Upper division)
Capstone Project	3 units (Upper division)

**Total 121 units**

Courses will be offered in a systematic manner, i.e., where applicable, prerequisites must be completed before the student can enroll in subsequent high-level offerings.. General Education and the Capstone Project are described in the following paragraphs.

**General Education 30 units (Lower division)**

Students pursuing a Bachelor of Quality Assurance Science degree must complete a breadth requirement of 30 General Education units. Students may elect to take the College-Level Examination Program (CLEP) exams to meet this requirement instead or in combination with courses. Credit given for General Education courses taken through CLEP exams is based on passing scores as determined according to the range of acceptable scores established by the American Council on Education (ACE).

- Communications (written/oral)
- Computation (quantitative reasoning/concepts)
- Social Science (history, sociology, economics, and politics)
- Computer Technology & Practice
- Humanities (literature, philosophy, language, culture, the arts)
- Life/Physical Sciences

**Capstone Project 3 units (Upper Division)**

A Capstone Project is required which entails an approved proposal on a subject relevant and current to Quality Assurance Science. The project report will be evaluated in terms of the relevance and high quality of the final product. The expectation is that the Capstone Project will entail one trimester of work requiring 4 hours of practicum each week for 15 weeks.

Continuing with your QAS education, an MBA can be earned with a specialization in Quality Assurance.

Bachelor of Quality Assurance Science Course Listing

General Education (30 Units)

Advisement for General Education courses is offered on an individual basis.

**Basic Sciences (22 Units)**

MATH General Mathematics 3 Units  
165

BSCI Algebra I 3 Units  
100A

BSCI Algebra II 3 Units  
100B

BSCI Pre-Calculus 3 Units  
100C

BSCI 101 Calculus I 3 Units  
BSCI 105 Probability and Statistics 3 Units

**Select one:**

BSCI 206 Physics I (Mechanics) 4 Units: 3 guided instruction/1 lab

BSCI 208 Chemistry I 4 Units: 3 guided instruction/1 lab

Lower division required Core Foundations of Quality Management (12 Units)

<u>QAS 201</u>	Total Quality Management	3 Units
<u>QAS 202</u>	Quality Control	3 Units
<u>QAS 204</u>	Fundamentals of Statistical Process Control	3 Units
<u>QAS 208</u>	The Economics of Quality	3 Units

**Upper division required Core Quality Assurance Techniques (30 Units)**

<u>QAS 305</u>	Baldrige Organizational Excellence Systems	3 units
<u>QAS 308</u>	Quality Problem Solving	3 Units
<u>QAS 310</u>	Quality Engineering	3 Units
<u>QAS 320</u>	Quality Auditing	3 Units
<u>QAS 330</u>	Quality Planning	3 Units
<u>QAS 350</u>	Customer Relationship and Satisfaction	3 Units
<u>QAS 440</u>	ISO Quality Systems	3 Units
<u>QAS 460</u>	Process Control and Capability	3 Units
<u>QAS 470</u>	Statistical Process Control Methods and Applications	3 Units
<u>QAS 480</u>	Six Sigma Methods	3 units

**Quality Assurance Electives (Select 24 Units)**

**Select 3 Units from 200-level and 21 Units from 300-400 level with approval of faculty advisor and/or Dean.**

<u>BCOM 301</u>	Introduction to Business Communications	3 Units
<u>FIN 306</u>	Introduction to Managerial Finance	3 Units
<u>HCM 320</u>	Analysis and Evaluation of Healthcare Services	3 Units
<u>HRM 303</u>	Fundamentals of Human Behavior in Organizations	3 Units
<u>HRM 305</u>	Key Factors of Human Resource Management	3 Units
<u>MGT 301</u>	Management Theory and Practice	3 Units
<u>MGT 420</u>	Production and Operations Management	3 Units
<u>MGT 422</u>	Introduction to Project Management	3 Units
<u>MSCI 285</u>	Introduction to Business Statistics	3 Units
<u>MSCI 301</u>	Introduction to Management Science	3 Units
<u>MSCI 386</u>	Fundamentals of Quantitative Analysis	3 Units
<u>QAS 203</u>	Inspection and Metrology	3 Units
<u>QAS 206</u>	Blueprint Reading	3 Units
<u>QAS 207</u>	Software Quality Assurance	3 Units
<u>QAS 209</u>	Supplier Quality Management	3 Units
<u>QAS 340</u>	Taguchi Methods	3 Units
<u>QAS 410</u>	Reliability Methods	3 Units
<u>QAS 420</u>	Geometric Dimensioning and Tolerancing	3 Units
<u>QAS 430</u>	Experimental Design	3 Units

Required (3 Units)

<u>QAS 499</u>	Capstone Project	3 Units
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**Quality Assurance Science**

**QAS 201. Total Quality Management — (3 units)**

***Prerequisite: General Education requirement or permission of your professor.***

An introduction to the principles and practices of TQM. Methods of leadership, goal-setting, employee involvement, JIT, benchmarking, QFD and other continuous improvement tools are introduced. Works of TQM

pioneers including Deming, Juran, Crosby, Feigenbaum, Ishikawa, Taguchi and Shingo. Current TQM approaches including Baldrige, ISO, and Six-Sigma.

**QAS 202. Quality Control — (3 units)**

*Prerequisite: General Education requirement or permission of your professor. Calculations can be done on a calculator; however, access to and knowledge of a current Excel program for performing calculations is highly recommended.*

A study of the basic quality control tools and philosophies that contribute to outgoing quality in the workplace. Essentials of quality assurance, control charts, sampling, reliability, quality costs, liability and quality concepts.

**QAS 203. Inspection and Metrology — (3 units)**

*Prerequisites: High school mathematics through second year algebra; Math 165 General Mathematics*

This course is designed to provide a background in principles of metrology, measurement tools, units of measure, dimensional metrology, measurements systems analysis, measurement error (R&R) studies, calibration and control of measurement equipment.

**QAS 204. Fundamentals of Statistical Process Control — (3 units)**

*Prerequisite: High school Mathematics through second-year Algebra. Pre-Calculus is desirable. Experience with and access to Microsoft Excel or some statistical software package.*

This course is designed to provide a basic background in the philosophy and statistical methods used to achieve control of systems and processes.

**QAS 206. Blueprint Reading — (3 units)**

*Prerequisite: General Education requirement or permission of your professor.*

This course provides a study of working blueprints and drawings commonly used in metalworking/manufacturing industries. Class projects include simple production drawings and complex assembly drawings in addition to sketching of simple machine parts.

**QAS 207. Software Quality Assurance — (3 units)**

*Prerequisite: General Education requirement or permission of your professor.*

A study of industrial, commercial and government requirements for the assurance of Quality Software. Descriptions and evaluations of software quality processes are explored along with management and technical integration techniques used to produce software that meets the project's needs.

**QAS 208. The Economics of Quality — (3 units)**

*Prerequisite: General Education requirement or permission of your professor.*

This course provides a practical and useful study of the principles of quality costs. The course emphasizes the proper implementation of a company-wide quality cost system designed to optimize costs in the four major quality cost segments-prevention, appraisal and internal and external failure.

**QAS 209. Supplier Quality Management — (3 units)**

*Prerequisite: General Education requirement or permission of your professor; Math Skills.*

The course provides an overview of supplier quality assurance principles and techniques stressing methods for obtaining quality products and services from suppliers. Discussed are supplier evaluation and selection, communication of quality requirements, performance measurement, solving supplier quality problems, and legal aspects of the customer-supplier relationship.

**QAS 305. Baldrige Organizational Excellence Systems — (3 units)**

***Prerequisite: QAS 201 Total Quality Management***

This course provides a comprehensive review of Baldrige Organizational Performance Excellence Management principles and philosophies, focusing on quality and continuous improvements in all aspects of business operation. A balance of case studies Baldrige winners, critical thinking activities and review questions will be used.

**QAS 308. Quality Problem Solving — (3 units)**

***Prerequisite: General Education requirement or permission of your professor.***

This course explores the Quality Problem Solving process and stresses proper selection and implementation of Corrective Action. Analytical techniques including Kaizen, Mistake-Proofing, and Root Cause Analysis are used to show how companies solve and prevent recurrence of quality problems.

**QAS 310. Quality Engineering — (3 units)**

***Prerequisite: QAS 202 Quality Control.***

This course presents an overview of quality engineering concepts as applied to in manufacturing and service industries. Topics covered include quality standards, improvement tools, basic statistics, process and material control and measurement systems. This course is also based on the quality engineering body of knowledge as identified by the American Society for Quality (ASQ), focusing on, but not limited to the following quality engineering topics: (a) quality control systems, (b) testing and inspection procedures, (c) metrology and statistical methods, (d) human factors and motivation, (e) quality cost concepts and techniques, (f) management information systems, (g) auditing quality systems, etc.

**QAS 320. Quality Auditing — (3 units)**

***Prerequisite: General Education requirement or permission of your professor.***

An overview of quality auditing principles and techniques; auditor qualifications; and how to prepare for, conduct, report on a quality audit to ISO 9000 or other standards, and post-audit and follow-up surveillance activities. Audit documentations, interpretations, checklists, effective questioning and listening techniques, and nonconformance reports.

**QAS 330. Quality Planning — (3 units)**

***Prerequisite: QAS 202 Quality Control.***

This course provides a comprehensive review of Quality Planning with focus on integration of quality and continuous improvements in all aspects of business operation. Building an integrated quality/business strategic plan, environmental analysis, and the role of leadership and vision. A balance of Case Studies, critical thinking activities and Review Questions are presented to illustrate the major concepts.

**QAS 340. Taguchi Methods — (3 units)**

***Prerequisite: QAS 202 Quality Control.***

An introduction to the experimental design and quality control methods of Dr. Genichi Taguchi. Taguchi's methods are covered with studies on products, processes and experimental designs used for quality improvement.

**QAS 350. Customer Relationship and Satisfaction — (3 units)**

***Prerequisite: You should be familiar with Microsoft Word, Microsoft Excel, and have the ability to view Microsoft Power Point Presentations.***

The purpose of this course is to familiarize the student with the necessity to build customer relationship and to accurately measure customer satisfaction levels and effectively link customer satisfaction excellence to process

improvement and business financial success. The student will learn why customer satisfaction has become so critical and the various methodologies available to effectively assess customer satisfaction levels.

**QAS 410. Reliability Methods — (3 units)**

***Prerequisite: QAS 204 Fundamentals of Statistical Process Control.***

A study of reliability methods with emphasis on the principles of reliability design, prediction methods, maintainability and availability, system reliability, and analysis of reliability data. Role, methodologies, and implementation of Failure Mode and Effects Analysis (FMEA) in design, process and preventive action.

**QAS 420. Geometric Dimensioning and Tolerancing — (3 units)**

***Prerequisite: QAS 206 Blueprint Reading.***

A study of geometric dimensioning and tolerancing in accordance with ANSI Y14.5 and ASME Y 14.5M - 1994. Standard U.S. methodology and symbology are practiced and demonstrated to be compatible with international standard ISO 1101.

**QAS 430. Experimental Design — (3 units)**

***Prerequisite: QAS 204 Fundamentals of Statistical Process Control.***

A study of Experimental Designs used in quality control. This course emphasizes the basic principles of Experimental Designs and focuses on classical and modern designs along with proper design selection.

**QAS 440. ISO Quality Systems — (3 units)**

***Prerequisite: QAS 202 Quality Control.***

A study of modern day Quality Assurance Systems with an emphasis on preparation and planning for system registration based on the ISO 9000 standards. Other standards introduced are: QS 9000 (automotive), AS 9000 (aerospace), Q19000 (Boeing), GMP (FDA), TL 9000 (telecommunications), and ISO 14000 (environmental).

**QAS 460. Process Control and Capability — (3 units)**

***Prerequisite: None.***

A detailed study of procedures and methods for performing machine and process capability studies, supplier capability studies, process and machine improvement, test and process troubleshooting and process capability database management.

**QAS 470. Graduate Statistical Process Control Methods and Applications — (3 units)**

***Prerequisite: QAS 204 Fundamentals of Statistical Process Control.***

This course builds on the fundamentals of Statistical Process Control (SPC) Methods. Case studies will be used to show how SPC methods are applied in organizations. Hands-on use of Microsoft Excel or some other statistical software package will be required.

**QAS 480. Six Sigma Methods — (3 units)**

***Prerequisite: QAS 202 Quality Control***

***Experience of at least six months working in Quality or Statistics will be helpful but not mandatory.***

This course provides a comprehensive review of Six Sigma Methods, focusing on quality and continuous improvement in all aspects of business operation. Critical to Quality (CTQ), DMAIC Methodology, and Design for Six Sigma (DFSS). Case studies, critical thinking activities and review questions will be used to illustrate major concepts.

**QAS 499. Capstone Project — (3 units)**

***Prerequisites: Five upper division courses in the BS Quality Assurance program.***

Access to and skills in using a computer with word and spreadsheet applications is required to produce a report,

the culmination of the course work. Excellent English language skills are required to organize and clearly express your ideas in your written report while using correct punctuation, spelling and grammar.

Your level of project management skill will directly influence the time spent and the quality of output.

Essential is the ability to do research using a variety of resources. Common resources are: local library of books and periodicals, the Internet Public Library (IPL) linked to the CNUAS website, other websites on the World Wide Web, hands-on experiments using the scientific method and personal interviews with experts and associates. The amount and type of additional resources will vary according to the focus of the course and what you already have discussed.

The focus of this capstone course is chosen cooperatively by you and your professor. You will apply Quality Assurance (QA) principles and theory to a specific job or occupational setting in line with your current professional interests and goals. You will gain the most value from the course and find high performance in it easily achievable if you keep the following in mind in selecting an area of study: personal interest, availability of resources, depth and breadth of application of QA methodologies, potential for use in workplace, synergism of learning from the BSQA curriculum.

### **QAS 516. Taguchi's Experimental Design Methods — (3 units)**

*Prerequisite: ENGR 502 Graduate Engineering Statistics or MSCI 585 Graduate Business Statistics.*

An in-depth study of Dr. Genichi Taguchi's experimental design methods and quality design and analysis techniques. An emphasis is placed on Mechanical and Electrical product and process improvements derived from 22 case studies of Taguchi's methods. Planning of experiments for best strategy and objectives is stressed. An overall emphasis is placed on providing engineering quality by design.

### **QAS 518. Software Reliability: Management, Methods and Mathematics — (3 units)**

*Prerequisite: ENGR 502 Graduate Engineering Statistics or MSCI 585 Graduate Business Statistics.*

A study of reliability concepts as related to software design and implementation including mathematics, management and methods. Reliability prediction, confidence assessment, system, safety, availability and maintainability principles studied along with the related distributions, and failure modes and effects analysis. What makes software reliability different from that found in standard engineering practice is the nature of failures to be found in software. Once found, a failure is no longer a failure, which implies that failures cannot be considered random variables. This introduces new approaches to software failures with some attempts to relate some of the processes to traditional reliability. Hence, the need for an in-depth knowledge of standard reliability distributions and methods.

### **Other QUALITY ASSURANCE SCIENCE Courses To Be Considered:**

#### **ENGR 503. Graduate Total Quality Assurance Management**

*Prerequisite: Graduate standing.*

A study of the functions and responsibilities of the quality organization. TQM concepts, QFD, JIT, SPC, and all other continuous improvement tools will be utilized as part of this course focusing on TQM deployment. The focus of this course will be on the people, organizational and technical issues related to implementation of quality systems.

Business Communications

#### **BCOM 301. Introduction to Business Communications — (3 units)**

*Prerequisite: MIS 202 Principles of Management Information Systems.*

Covers theory of oral and written communications. Overview of standard practices and effective procedures to

develop and handle a wide range of frequently used business documents including memos, letters, proposals and reports. Focuses on methods to process decision-support information.

**FIN 306. Introduction to Managerial Finance — (3 Units)**

***Prerequisite: ACCT 302 - Managerial Accounting***

*Also, you should have a good understanding of Macroeconomics and Microeconomic concepts and have Math skills. You should have proficiency with word processing (MS Word or WordPerfect) and spreadsheet (Excel or Quattro Pro) programs.*

Develops an overview of managerial finance focusing on financial markets, capital structure, working capital management, dividend policy, and short and long-term financing decisions.

Health Care Management

**HCM 320. Analysis & Evaluation of Health Care Services — (3 Units)**

***Prerequisite: MSC1 285 Introduction to Business Statistics.***

Techniques of analysis and evaluation applied to health services with respect to organizing, staffing, financing, and utilization. Emphasis on the analytic process, program evaluation, and report of findings.

Human Resources Management

**HRM 303. Fundamentals of Human Behavior in Organizations — (3 Units)**

***Prerequisite: MGT 301 Management Theory & Practice.***

Presents and explores the impact of selected behavioral issues found in the organizational setting. An in-depth focus of past and current theories concerning the cause and effects of Work Motivation, Attitude Formation, and Perceptions in different social settings, including those that are culturally diverse. The course includes exploring how Personality Theory can be applied to selection, training and placement, learning and organization behavior modification, group processes covering politics and conflict and individual and social bases for decision making.

**HRM 305. Key Factors of Human Resources Management — (3 Units)**

***Prerequisite: MGT 301 Management Theory Practice.***

Studies the key factors of human resource management within the organization including recruiting, selecting, training, developing employees, wage administration and union relations.

Management

**MGT 301. Management Theory & Practice — (3 Units)**

***Prerequisite: None.***

Overview of management responsibilities, including planning, directing, leading, and controlling. Identification and analysis of key employee issues, including work motivation, personality, attitudes, individual and social behavior, and corporate culture; industry and macro-environmental threats and opportunities; and methods and systems for effectively addressing them. Focuses on planning and decision-making; ethics and social responsibility; leadership; performance appraisal, reward, information, and control systems; job, group, and organizational analysis and design; operations and strategic management; and organizational change and development.

**MGT 420. Production and Operations Management — (3 Units)**

***Prerequisite: MSC1 301 Introduction to Management Science.***

Covers effective decision-making tools and techniques for production and operations. Includes decision theory, tools, techniques, and support systems; aggregate planning; system location, layout design and maintenance; statistical applications to quality control, with an emphasis on Total Quality Management inventory and statistical process control; materials requirement planning; and forecasting.

**MGT 421. Manufacturing Management Systems — (3 Units)**

*Prerequisites: MSCI 285 Introduction to Business Statistics, MSCI 301 Introduction to Management Science.*

Covers the development and implementation of systems for production design and planning, inventory and shop floor control, and other manufacturing related tasks. Includes the nature and applications of computer-aided design and manufacturing (CAD/CAM) programs. Assignments include the design of a prototype manufacturing management system.

**MGT 422. Project Management— (3 Units)**

*Prerequisites: The student is expected to have a basic understanding of management foundations, to be familiar with the case study method, and to have basic presentation skills.*

*Pre-requisite courses: MGT 301- Management Theory & Practice; MSCI 285-Introduction to Business Statistics; MSCI 301-Introduction to Management Science .*

A course dealing with planned project execution and management in organizations; covering the organization, staffing, planning, scheduling, controlling, budgeting, and evaluation of small, intermediate, and large projects. Course work includes various current techniques such as PERT, technologies such as project management software packages; and organizational structures such as matrix support. Project Management at the individual, team (group), and organizational level.

Management Science

**MSCI 285. Introduction to Business Statistics — (3 units)**

*Prerequisite: MATH 175 Mathematics for Business Applications.*

Develops knowledge and skills to effectively apply statistical techniques to the design and evaluation of research regarding business practice. Included is the knowledge and skills to select statistical procedures appropriate to a research task and design, and the performance of accurate calculations in applying them. Covers concepts and techniques regarding:

- a) procedures for organizing data
- b) probability concepts, distributions, and techniques
- c) sampling distributions and construction for surveys
- d) measures of and tests of hypotheses – large and small samples
- e) linear regression and correlation
- f) chi-square

**MSCI 301. Introduction to Management Science — (3 units).**

*Prerequisite: MSCI 285 Introduction to Business Statistics.*

The course covers fundamental theory, concept, research, and practice in operations research and management science. Topics include linear programming, transportation and assignment problems, forecasting techniques, statistical quality control, inventory management, decision analysis, queuing analysis applied to tactical and strategic business decision in functional areas and interfaces among these areas.

**MSCI 386. Fundamentals of Quantitative Analysis — (3 units)**

*Prerequisites: MSCI 285 Introduction to Business Statistics, MSCI 301 Introduction to Management Science.*

Identifies, presents, and explains quantitative techniques to optimize managerial decision making. Includes decision theory, tools, and techniques under conditions of certainty and uncertainty; model building; linear programming; and simulation.

## **Master of Engineering Management (MEM) Degree Program**

The degree programs offered by the **College of Quality and Engineering Management** are designed to prepare students for rewarding careers in Quality Assurance Science and Engineering Management. Graduates are expected to possess sufficient knowledge to achieve professional certification (e.g., registration with ASQ or PMI) if they choose to do so. Expected outcomes for each degree program are based on guidelines established by the appropriate professional organizations such as the *American Society for Quality (ASQ)* and *Project Management Institute (PMI)*.

### **Master of Engineering Management Program Objectives:**

The **MEM** program is a breadth degree geared to the needs of technical professionals who strive to become leaders in technology-oriented firms. The **MEM** program objective is to provide the individual with the breadth of knowledge required for successful project management, and with the ability to integrate knowledge from diverse disciplines. The degree requirements include core courses, electives, and a culminating experience. Electives may be chosen to focus in one or more of the following areas: Quality Management, Business Systems, and Engineering Systems.

### **MEM Program Learning Outcomes:**

- An understanding of management concepts related to product quality.
- An appreciation of advances in computer technology relevant to the management of engineering projects.
- An ability to identify and analyze managerial and organizational informational needs, and to apply information technologies and statistical techniques and procedures, including recent and emerging developments in business decision making.
- An ability to apply behavioral principles connected with self-awareness, perception, communication, motivation, productivity, group processes, organizational change, personal stress, and leadership.
- An understanding and appreciation of the multi-faceted legal, political, governmental, financial and cultural issues related to the international business environment and the development of strategies to address them.

### **MEM Program Objectives:**

- An understanding of management concepts related to product quality.
- An appreciation of advances in computer technology relevant to the management of engineering projects.
- An ability to identify and analyze managerial and organizational informational needs, and to apply information technologies and statistical techniques and procedures, including recent and emerging developments in business decision making.
- An ability to apply behavioral principles connected with self-awareness, perception, communication, motivation, productivity, group processes, organizational change, personal stress, and leadership.
- An understanding and appreciation of the multi-faceted legal, political, governmental, financial and cultural issues related to the international business environment and the development of strategies to address them.

## **MASTER OF ENGINEERING MANAGEMENT DEGREE PROGRAM REQUIREMENTS**

A Bachelor's degree in Engineering or related fields is required for admission to the MEM program. A degree is awarded upon satisfactory completion of 36 units of academic work with a cumulative GPA of 3.0 or better in the following areas:

### **MGT 501. Graduate Management Theory & Practice — (3 Units)**

*Prerequisite: Graduate Standing. The Microsoft PowerPoint version that accompanies MS Word 97 or 2000 is also required.*

Covers various management approaches, including recent, emerging, and anticipated developments. Focuses critical attention on relevant theory, research, and practice; facilitates the development of analytical and research skills to encourage further contributions to the field; and identifies important and current employee issues for application of existing and future management knowledge.

### **MGT 520. Graduate Production & Management Systems Analysis & Development — (3 Units)**

*Prerequisite: Graduate Standing.*

This course identifies key production problems, including planning, scheduling, layout, and control; applies the system approach to their resolution; and includes recent developments, such as decision analysis and large-scale modeling.

### **MGT 522. Graduate Project Management — (3 Units)**

*Prerequisites: MGT 501 Graduate Management Theory and Practice*

The student is expected to have a basic understanding of management foundations, to be familiar with the case study method, and to have basic presentation skills.

This course deals with planned project execution and management in organizations; covering the organization, staffing, planning, scheduling, controlling, budgeting, and evaluation of small, intermediate, and large projects. Course work includes various current techniques such as PERT, technologies such as project management software packages; and organizational structures such as matrix support, project management at the individual, team (group), and organizational level.

### **ENGR 502. Graduate Engineering Statistics — (3 units)**

*Prerequisites: BSCI 102 Calculus II (3 Units).*

A study of advanced probability distributions, sampling theory, hypothesis testing, linear regression and estimation, advanced statistical applications and confidence intervals.

### **ENGR 503. Graduate Total Quality Assurance Management — (3 units)**

*Prerequisite: Graduate standing.*

A study of the functions and responsibilities of the quality organization. TQM concepts, QFD, JIT, SPC, and all other continuous improvement tools will be utilized as part of this course focusing on TQM deployment. The focus of this course will be on the people, organizational and technical issues related to implementation of quality systems.

### **Pre-Approved Electives (18 units)**

Graduate Engineering, Quality and Business courses may be submitted to the Academic Dean for approval of additional elective courses:

**FIN 501. Graduate Financial Theory & Policy — (3 Units)**

*Prerequisite: ACCT 501 Graduate Financial Theory & Policy; ECON 501 Graduate Economic Analysis*

Directs critical attention to financial theory, focuses on its direct application to business analysis and management, and covers a wide range of financial concepts.

**IBUS 503. Graduate International Management — (3 Units)**

*Prerequisites: Graduate Standing.*

Includes the application of specialized or recently developed theory, concepts, and techniques to the resolution of important, complex, or current management issues facing the multinational or multicultural firm. Focuses on social, cultural, or political issues and management strategies to resolve them to maximize productivity, job satisfaction, and organizational effectiveness.

**MGT 511. The Management of Knowledge Workers — (3 Units)**

*Prerequisite: MGT 501 Graduate Management Theory & Practice.*

Recognizes the value, uniqueness, and management challenges presented by the professional employee, and methods for addressing them. Focuses on the problems of measuring and rewarding unstructured task performance, developing incentives that meet the special needs of professionals, nurturing innovation and creativity, and resolving the tension between control and autonomy.

**MIS 502. Graduate Computers & Management Information Systems — (3 units)**

*Prerequisite: None. You should have completed prior, lower level course in Information Systems, or have the appropriate work experience. For each of the case studies that students will complete in this course, students are expected to prepare PowerPoint slides.*

An introduction to the study and practice of information systems management. The objective is to facilitate students' understanding of the structure, development, and management of information systems that can support a wide range of organizational functions at various levels with a view to develop a capability to analyze and/or to design an information system to satisfy business needs. Component parts of the information system are studied, together with the interactions between such components.

The discussion assumes logical reasoning to be the core of conceptualization. Thus, much of the material covered appears to be a re-statement of common sense logic, which in fact it is. You will frequently observe formalized statements of natural reasoning in the context of computer operations and information systems structure and application.

**MSCI 532. Advanced Quality Control — (3 units)**

*Prerequisite: MGT 520 Advanced Production & Management System Analysis & Development.*

From a managerial perspective, covers a wide range of methods for assurance of control over product quality and production process. Focuses on staffing, organizing, training, and supervising to integrate total quality management at all levels of the organizational structure and stages of the production process.

**MSCI 580. Advanced Systems Modeling & Simulation — (3 units)**

*Prerequisite: MIS 502 Computers and Management Information Systems.*

Covers the techniques of developing and using simulation models as an experimental method in design, planning, and control of operational systems. Simulation models of operational systems are constructed on a computer, and used to evaluate alternative design configurations, decision rules and control techniques.

### **QAS 440. ISO Quality Systems — (3 units)**

**Prerequisite:** *QAS 202 Quality Control.*

A study of modern day Quality Assurance Systems with an emphasis on preparation and planning for system registration based on the ISO 9000 standards. Other standards introduced are: QS 9000 (automotive), AS 9000 (aerospace), Q19000 (Boeing), GMP (FDA), TL 9000 (telecommunications), and ISO 14000 (environmental).

### **QAS 516. Taguchi's Experimental Design Methods — (3 units)**

**Prerequisite:** *ENGR 502 Graduate Engineering Statistics or MSCI 585 Graduate Business Statistics.*

An in-depth study of Dr. Genichi Taguchi's experimental design methods and quality design and analysis techniques. An emphasis is placed on Mechanical and Electrical product and process improvements derived from 22 case studies of Taguchi's methods. Planning of experiments for best strategy and objectives is stressed. An overall emphasis is placed on providing engineering quality by design.

## **Bachelor of Science in Business Administration**

CNU's Business Administration degree programs are modeled closely after the *American Assembly of Collegiate Schools of Business* accreditation standards (AACSB). CNU bachelor's and master's graduates in Business Administration are individuals equipped with the broadest range of capabilities to maximize U.S. competitiveness, effectively meeting the challenges of a changing international, economic, legal, political and technological environment

Bachelor of Science in Business Administration Program Objectives:

At the undergraduate level, **BSBA** courses provide a broad contextual study of business administration. The **BSBA** program objectives are to prepare individuals with the critical, analytical and communication skills that encourage professional growth. The core curriculum includes accounting, behavioral science, economics, finance, and mathematics and statistics. A substantial roster of elective courses provide students with the opportunity to pursue an in-depth study in a specific area of relevance or pursue a more comprehensive study of the field.

### **BSBA Program Learning Outcomes:**

- An ability to apply principles of planning, organizing, leading, and controlling in the management of businesses.
- An ability to design, develop and implement strategic and operational plans in businesses in the context of market competition, social, legal, financial, technological and ecological environments.
- An ability to design, develop and implement strategies related to the marketing of products and services.
- An ability to design and apply knowledge of financial and managerial accounting such as preparation and analysis of financial statements and cost accounting used in businesses.
- An ability to identify and apply legal concepts such as torts and contracts, and laws of agency, partnerships, and corporations in today's litigious business environment.
- An ability to identify and analyze managerial and organizational informational needs, and to apply informational technologies in business decision making.
- An understanding and appreciation of statistical techniques and procedures and its application to business problems.
- An understanding and appreciation of micro and macroeconomics including sources of market inefficiencies, government policies and regulations, impact of inflation, interest rates, international trade, and competition.
- An understanding and appreciation of financial decision-making including security analysis, financial institutions, money markets and financial forecasting.

- An understanding and appreciation of behavioral issues found in organizations, including motivation, cultural diversity, and personality.
- An understanding and appreciation of human resource management including issues of recruiting, selecting, training, developing employees, wage administration and union relations.
- An understanding and appreciation of the multi-faceted legal, political, governmental, financial and cultural issues related to the international business environment and the development of strategies to address them.
- An ability to communicate effectively.

## **BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION DEGREE PROGRAM REQUIREMENTS**

High school diploma or GED equivalent is required for admission to the Bachelor of Science degree program. A degree is awarded upon satisfactory completion of 120 units of academic work with a cumulative GPA of 2.0 or better in the following areas:

The Bachelor of Computer Science degree program requires satisfactory completion of 121 units of academic work with a cumulative GPA of 2.0 or better in the following areas:

### ***Business Administration***

General Education	30 units
Lower-division core	15 units
Upper-division core	36 units
Electives <i>(Must include 1 Practicum)</i>	36 units
Capstone Project	3 units
<b>Minimum Total</b>	<b>121 units</b>

Courses are offered in a systematic manner, i.e., where applicable, prerequisites will be completed before the student can enroll in subsequent high-level offerings.

### **General Education (30 units)**

Students pursuing a Bachelor of Science in Business Administration must complete a breadth requirement of 30 General Education units. The Business Administration area requires that students select at least one course from among the disciplines listed below. Students may elect to take the College-Level Examination Program (CLEP) exams to meet this requirement instead or in combination with courses. Credit given for General Education courses taken through CLEP exams is based on passing scores as determined according to the range of acceptable scores established by the American Council on Education (ACE).

- Communications (written/oral)
- Computation (quantitative reasoning/concepts)
- Social Science (history, sociology, economics, and politics)
- Computer Technology & Practice
- Humanities (literature, philosophy, language, culture, the arts)
- Life/Physical Sciences

### **Lower Division Core**

<u>ACCT 201</u>	Introduction to Financial Accounting	3 Units
<u>BLAW 201</u>	Business Law I	3 Units
<u>MATH 175</u>	Mathematics for Business Applications	3 Units
<u>MIS 202</u>	Principles of Management Information Systems	3 Units
<u>MSCI 285</u>	Introduction to Business Statistics	3 Units

### **Upper Division Core**

<u>ACCT 302</u>	Introduction to Managerial Accounting	3 Units
<u>BCOM 301</u>	Introduction to Business Communications	3 Units
<u>BLAW 301</u>	Business Law II	3 Units
<u>ECON 301</u>	Principles of Business Economics (Micro)	3 Units
<u>ECON 311</u>	Principles of Macroeconomics	3 Units
<u>FIN 301</u>	Principles of Finance	3 Units
<u>HRM 303</u>	Fundamentals of Human Behavior in Organizations	3 Units
<u>IBUS 301</u>	The International Business Environment	3 Units
<u>MGT 301</u>	Management Theory & Practice	3 Units
<u>MIS 301</u>	Business Data Communications	3 Units
<u>MSCI 301</u>	Introduction to Management Science	3 Units
<u>MKT 301</u>	Introduction to Marketing	3 Units

### **Electives**

In addition to completing General Education Requirements and a lower and upper division Core, Bachelor of Science in Business Administration students are expected to complete an elective program by selecting 36 units from among the disciplines listed below. Students may choose electives in either a breadth format or a specific area or areas of concentration. Courses should be selected with the approval of the Business Administration Faculty and/or Dean.

Accounting Business Elective Credit Business Law Economics Finance Health Care Management Human Resources Management Management Management Information Systems Management Science Marketing
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### **Capstone Project 3 units (Upper division)**

A Capstone Project is required which begins with an approved proposal on a relevant and current subject. The Capstone Project should demonstrate the student's ability to apply the principles of Computer Science to a practical problem. The Capstone Project will entail one trimester of work requiring 4 hours of practicum per week for 15 weeks and culminate in a formal report.

**MGT 492                      Strategic Planning & Management                      3 units**

### **Course Descriptions**

**ACCT 201. Introduction to Financial Accounting — (3 units)**

***Prerequisite: None.***

Covers the fundamentals of reporting and accounting for income, losses, assets, liabilities, and owners' equity for sole proprietorships, partnerships and corporations. Includes preparation and analysis of financial statements.

**BLAW 201. Business Law I — (3 units)**

*Prerequisite: General Education requirements or permission of instructor.*

Introduces two of the most important legal concepts a business person must know to be successful in today's litigious business environment. Students will gain a detailed understanding of the law of Torts and Contracts.

**MATH 175. Mathematics for Business Applications — (3 Units)**

*Prerequisite: A minimum of "C" grade in high school algebra and a minimum score of 60% on the algebra section of the math placement test, or permission of your professor.*

Mathematics applicable to problems in business and economics. Includes sets; linear, quadratic, exponential, and logarithmic functions; inequalities, matrices; differentiation; integration and extreme values.

**MIS 202. Principles of Management Information Systems — (3 units)**

*Prerequisite: You will need to have access to a computer with an Office Suite (Word Processing, Spreadsheet and Data Base Management System), E-mail and Internet. The Microsoft Office Suite is preferred, but other Office Suites will do.*

The principles of computer-based management information systems (MIS) are introduced and discussed. In the process of doing this, the managerial/organizational information needs are given high priority. The role of information systems in management, including current professional practices and methodologies, are described. Topics include the general systems theory, decision theory, organizational models, types and benefits of information systems, systems planning and development, and management and control of information systems.

**MSCI 285. Introduction to Business Statistics — (3 units)**

*Prerequisite: MATH 175 Mathematics for Business Applications.*

Develops knowledge and skills to effectively apply statistical techniques to the design and evaluation of research regarding business practice. Included is the knowledge and skills to select statistical procedures appropriate to a research task and design, and the performance of accurate calculations in applying them. Covers concepts and techniques regarding:

- procedures for organizing data
- probability concepts, distributions, and techniques
- sampling distributions and construction for surveys
- measures of and tests of hypotheses – large and small samples
- linear regression and correlation
- Chi-square

**ACCT 302. Introduction to Managerial Accounting — (3 units)**

*Prerequisite: ACCT 201 Introduction to Financial Accounting.*

Application of accounting data and concepts for managerial planning and control, including cost accounting and responsibility accounting.

**BCOM 301. Introduction to Business Communications — (3 units)**

*Prerequisite: MIS 202 Principles of Management Information Systems.*

Covers theory of oral and written communications. Overview of standard practices and effective procedures to develop and handle a wide range of frequently used business documents including memos, letters, proposals and reports. Focuses on methods to process decision-support information.

**BLAW 301. Business Law II — (3 units)**

*Prerequisite: BLAW 201 Business Law I.*

Covers three very important legal concepts a business person must know to be successful in today's litigious business environment. Students will gain a detailed understanding of the law of agency, partnerships, and corporations.

**ECON 301. Principles of Business Economics (Micro) — (3 units)**

*Prerequisite: MATH 175 Mathematics for Business Applications.*

Principles of Business Economics introduce students to different economic markets, theories and policies with application to current economic issues. Emphasis is on the analysis of consumer behavior, markets, demand and supply, market equilibrium, price determination within different market structures, demand for factors of production, environmental issues, income distribution, and the effects of government policies and regulations in controlling price and promoting competition.

**ECON 311. Principles of Macroeconomics — (3 units)**

*Prerequisite: ECON 301 Principles of Business Economics (Micro).*

Principles of Macroeconomics introduces students to different macroeconomic theories and policies with application to current economic issues. Emphasis is on the analysis of national output and income, the effects of government fiscal and monetary policy, economic growth and stability, and international finance and trade.

**FIN 301. Principles of Finance — (3 Units)**

*Prerequisite: MATH 175 Mathematics for Business Applications*

*Students must have:*

*Math 175 Mathematics for Business Applications*

*A PC with MS-Office installed, access to the Internet, and an email address*

*A working knowledge of, and familiarity with, application software in general.*

Overview of financial decision making, including significant issues to be addressed and analytical techniques for optimizing these issues. This course also covers the fundamentals of security analysis, portfolio management, financial institutions, money markets, and financial forecasting

**HRM 303. Fundamentals of Human Behavior in Organizations — (3 Units)**

*Prerequisite: MGT 301 Management Theory & Practice.*

Presents and explores the impact of selected behavioral issues found in the organizational setting. An in-depth focus of past and current theories concerning the cause and effects of Work Motivation, Attitude Formation, and Perceptions in different social settings, including those that are culturally diverse. The course includes exploring how Personality Theory can be applied to selection, training and placement, learning and organization behavior modification, group processes covering politics and conflict and individual and social bases for decision-making.

**IBUS 301. The International Business Environment — (3 Units)**

*Prerequisite: None.*

Includes economic, legal, political, governmental, financial and cultural issues related to international business environment and the multidisciplinary development of strategies to address it. Focuses on opportunities for, threats to, and options facing the multinational or multicultural business enterprises, emphasizing host government, work force, and consumer needs, preferences, and demands and strategies for responding to them.

**MGT 301. Management Theory & Practice — (3 Units)**

***Prerequisite: None.***

Overview of management responsibilities, including planning, directing, leading, and controlling. Identification and analysis of key employee issues, including work motivation, personality, attitudes, individual and social behavior, and corporate culture; industry and macro-environmental threats and opportunities; and methods and systems for effectively addressing them. Focuses on planning and decision-making; ethics and social responsibility; leadership; performance appraisal, reward, information, and control systems; job, group, and organizational analysis and design; operations and strategic management; and organizational change and development.

**MIS 301. Business Data Communications — (3 units)**

***Prerequisites: MIS 202 – Principles of Management Information Systems or permission of your professor.***

An introduction to the concepts and technology of on-line and network-based information systems for business data communications. Emphasizes management considerations, requirements analysis, capacity planning, micro-mainframe connectivity, and decentralized transaction processing. Includes the use of both management cases and laboratory projects. This is the first class of two classes for a complete course in Modern Data Communication and Networks.

**MSCI 301. Introduction to Management Science — (3 units).**

***Prerequisite: MSCI 285 Introduction to Business Statistics.***

The course covers fundamental theory, concept, research, and practice in operations research and management science. Topics include linear programming, transportation and assignment problems, forecasting techniques, statistical quality control, inventory management, decision analysis, queuing analysis applied to tactical and strategic business decision in functional areas and interfaces among these areas.

**MKT 301. Introduction to Marketing (3 units)**

***Prerequisite: None. Access to PowerPoint and Excel is expected for creating charts and presentations.***

Covers the conduct and management of activities related to the marketing of products and services. Overview of marketing strategy, market segmentation, consumer behavior, advertising and promotion, channels of distribution, marketing institutions, and legal and economic issues.

**Electives (36 units)****ACCT 304. Intermediate Financial Accounting — (3 units).**

***Prerequisite: ACCT 201 Introduction to Financial Accounting.***

Covers the fundamentals of reporting and accounting for income, losses, assets, liabilities, and owner's equity for sole proprietorships, partnerships, and corporations. Includes preparation and analysis of financial statements.

**ACCT 305. Principles of Auditing — (3 units)**

***Prerequisite: ACCT 201 Introduction to Financial Accounting.***

This course is a study of the systematic process of reporting financial information to external decision-makers and the related auditing process of expressing an opinion on the fairness of management assertions represented in the financial statements. The course is intended to help students develop critical and analytical abilities in regard to financial accounting and auditing topics and theory. Further, it will enhance students' understanding of the relationships that exist between financial reporting and auditing.

The focus of the course will be to develop the ability to analyze and apply the basic theory and practice of financial accounting and auditing. In this course students will develop an understanding of the financial

reporting process and the means by which auditors validate or lend credibility to the information presented in these statements. The emphasis is on the commonalities of recognition, measurement, and disclosure rules. Auditing topics covered include (1) The Sarbanes-Oxley Act of 2002 (2) Generally Accepted Auditing Standards; (3) audit reports; (4) internal control; (4) evidence; (6) audit programs, procedures and working papers.

**ACCT 309. Accounting Theory and Practice — (3 units)**

***Prerequisite: ACCT 304 Intermediate Financial Accounting.***

Covers current accounting issues and the setting of standards by the Financial Accounting Standards Board and Securities and Exchange Commission; focuses on specialized accounting for joint ventures, government and non-profit organizations.

**ACCT 311. Fundamentals of Individual Income Tax — (3 units)**

***Prerequisite: ACCT 201 Introduction to Financial Accounting.***

Covers federal individual income tax, including applicable regulations, calculation procedures, and methods for planning and accounting for it. Includes income inclusions and exclusions; deductions and losses; dependents; business and employee expenses; tax credits; self-employment; capital gains and losses; and retirement accounts.

**ACCT 312. Fundamentals of Business Income Tax — (3 units)**

***Prerequisite: ACCT 311 Fundamentals of Individual Income Tax.***

Covers the laws and regulations governing calculation of, planning and accounting for federal income taxation of business entities including C Corporations, Partnerships, Limited Liability Companies and S Corporations.

**ACCT 315. Accounting Information Systems — (3 units)**

***Prerequisite: ACCT 302 Introduction to Managerial Accounting.***

Accounting 315 teaches from an accounting rather than a management information systems perspective and focuses on the integration of skills related to designing and using accounting information systems, improving communication skills, using information in decision making, and designing and implementing control systems in advanced technology environments. Major topics include:

- AIS foundations
- Data management and electronic commerce
- Internal control
- AIS applications
- Systems development

**ACCT 493. Practicum in Accounting — (2 units)**

***Prerequisite: ACCT 201 Introduction to Financial Accounting.***

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper will be assigned and graded for evaluation purposes.

**ACCT 494. Practicum in Accounting — (3 units)**

***Prerequisite: ACCT 201 Introduction to Financial Accounting.***

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper will be assigned and graded for evaluation purposes.

**ACCT 498. Directed Individual Study in Accounting — (2 units)**

*Prerequisite: ACCT 201 Introduction to Financial Accounting.*

Course content to be arranged with faculty.

**ACCT 499. Directed Individual Study in Accounting — (3 units)**

*Prerequisite: ACCT 201 Introduction to Financial Accounting.*

Course content to be arranged with faculty.

**BLAW 301. Business Law II — (3 units)**

*Prerequisite: BLAW 201 Business Law I.*

Covers three very important legal concepts a business person must know to be successful in today's litigious business environment. Students will gain a detailed understanding of the law of agency, partnerships, and corporations.

**BLAW 315. Employment Law — (3 units)**

*Prerequisite: None.*

Explores the legal considerations that occur when an employer-employee relationship is established. Covers labor law, discrimination, equal pay and comparable worth, occupational safety and health, worker's compensation, disability law, and employment privacy issues. Focuses on permissible activities in handling personnel problems, and emphasizes preventive law.

**BLAW 320. Environmental Law — (3 units)**

*Prerequisite: None*

Covers the extensive environmental laws that affect virtually every business, especially air pollution, water pollution, waste disposal and the regulation of chemicals.

**BLAW 420. Law of Sales Contracts (Uniform Commercial Code) — (3 units)**

*Prerequisite: BLAW 201-Business Law I; BLAW 301 Business Law II*

This course covers the laws pertaining to the sales of goods, including the formation, terms and performance of sales contracts; remedies for breach of sales contracts and products liability. It also includes negotiable instruments, creditors' rights and bankruptcy, personal and real property, insurance, wills, trusts, elder law and professional liability and accountability.

**BLAW 425. Intellectual Property and Cyberlaw — (3 units)**

*Prerequisites: BLAW 201-Business Law I; some previous coursework related to law*

An advanced course investigating the distinct applications of law in cyberspace. The course will cover a variety of topics, including intellectual property rights, civil and criminal jurisdiction, and free speech issues. Focuses on the challenges posed by the internet to traditional notions of regulation, federal and local control, and jurisdiction over individuals and corporations. Students should emerge from the course with a grasp of the practical and the theoretical difficulties in applying traditional structures to cyberspace, and a keen sense of the current state of development.

**ECON 380. Introduction to Econometrics — (3 units)**

*Prerequisite: MSCI 285 Introduction to Business Statistics*

*Suggested skills (Statistical Software): ECSTAT, or SAS, or SPSS, or MINITAB, or consult with instructor*

Covers the nature and application of statistical methods for determining relationships among economic variables. Includes hypothesis formulation and testing, single and simultaneous-equation estimation, linear regression, time-series analysis, and forecasting.

**FIN 306. Introduction to Managerial Finance — (3 Units)**

*Prerequisite: ACCT 302 - Managerial Accounting*

*Also, you should have a good understanding of Macroeconomics and Microeconomic concepts and have Math skills. You should have proficiency with word processing (MS Word or WordPerfect) and spreadsheet (Excel or Quattro Pro) programs.*

Develops an overview of managerial finance focusing on financial markets, capital structure, working capital management, dividend policy, and short and long-term financing decisions.

**FIN 310. Investment Analysis & Management — (3 Units)**

*Prerequisite: FIN 301 Principles of Finance*

Overview of investment opportunities, including corporate and government securities, real property, commodities, bonds, and others. Focuses on investment theory and its application to security analysis, valuation, and portfolio management.

**FIN 430. Financial Management — (3 Units)**

*Prerequisites: MGT 301 Management Theory & Practice, FIN 301 Principles of Finance*

*Competency in Microsoft Excel and Word and the utilization of the financial functions available in Excel and tools provided by Blackboard.*

This course is designed to provide students with experiential learning in finance utilizing comprehensive cases. Most cases are derived from actual situations from which managers would gain valuable experience.

**FIN 435. Management of Financial Institutions — (3 units)**

*Prerequisites: FIN 301 Principles of Finance; ECON 311 Principles of Macroeconomics*

Focuses on the nature of the finance industry and on the development, operation, and management of firms within it. Emphasizes the sources and uses of funds and applicable government regulations.

**FIN 493. Practicum in Finance — (2 Units lab)**

*Prerequisite: FIN 301 Principles of Finance.*

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, which is to be verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**FIN 494. Practicum in Finance — (3 Units lab)**

*Prerequisite: FIN 301 Principles of Finance.*

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, which is to be verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**FIN 498. Directed Individual Study in Finance — (2 Units)**

*Prerequisite: FIN 301 Principles of Finance.*

Course content arranged with faculty.

**FIN 499. Directed Individual Study in Finance — (3 Units)**

*Prerequisite: FIN 301 Principles of Finance.*

Course content arranged with faculty.

**HCM 320. Analysis & Evaluation of Health Care Services — (3 Units)**

*Prerequisite: MSCI 285 Introduction to Business Statistics.*

Techniques of analysis and evaluation applied to health services with respect to organizing, staffing, financing, and utilization. Emphasis on the analytic process, program evaluation, and report of findings.

**HRM 305. Key Factors of Human Resources Management — (3 Units)**

*Prerequisite: MGT 301 Management Theory Practice.*

Studies the key factors of human resource management within the organization including recruiting, selecting, training, developing employees, wage administration and union relations.

**HRM 315. Employment Practices & the Law — (3 Units)**

*Prerequisite: BLAW 201 Business Law, BCOM 301 Fundamentals of Business Communications, MKT 301 Introduction to Marketing, HRM 305 Human Resources Management, BLAW 305 Business Ethics.*

Employment Practices and the Law primarily involve a study of the procuring and orienting of individuals to organizations. Evaluates recruiting, selection, induction, and follow-up methods in light of current legislation. The staffing function of the resource aspects of a management position. All aspects of the legal environment in which Human Resources management must conform to including Civil Rights legislation, Equal Employment Opportunity (EEO), Equal Pay Act, sexual harassment, and the American with Disabilities Act (ADA) are covered in the course.

**HRM 317. Creating Training & Development Programs — (3 Units)**

*Prerequisite: HRM 315 Employment Practices & the Law.*

How to develop successful training programs which reinforce the company's mission and goals. The course examines the design, operation, and evaluation of training and development activities in organizations. Reviews the legal forces influencing training in organizations.

**HRM 318. Human Resources Appraisal & Reward Strategies — (3 Units)**

*Prerequisite: HRM 315 Employment Practices & the Law.*

Strategic and ethical considerations in appraising and rewarding people at work. Exploration of various appraisal and compensation systems. Examination of legal and other environmental factors influencing appraisal and compensation activities.

**HRM 320. Labor & Management Relations — (3 Units)**

*Prerequisite: HRM 315 Employment Practices & the Law.*

Dynamics of labor-management relations, with an emphasis on the significance of dealing with unions and the realities of the constraints industrial relations place on the managerial decision-making process. Topics include the development of unions, union recognition, Collective Bargaining and its impact on wages, hours, working conditions, grievance procedures, and health and safety. Cases from the National Labor Relations Hearing and Administrative Review Boards will also be studied and analyzed.

**HRM 391. Compensation and Benefits — (3 Units)**

*Prerequisites: HRM 305 Key Factors of Human Resources Management*

This course focuses on the effective management of employee compensation and benefits in contemporary organizations. The course includes emerging issues in compensation administration. Here, compensation is studied from the organization's perspective rather than from the view of the individual employee or society. The content of the course applies to organizations large and small, in the public and private sectors. Terminology may be adapted, but the theories, processes and techniques of good compensation decision-making remain stable across various types of organizations.

The goals of compensation administration are to design compensation systems that elicit desired employee behaviors at work; to motivate employees to join, stay and perform at high levels; and for the organization to remain ethical and legal in its compensation programs. This course provides an overview of how an organization is to accomplish these purposes.

**HRM 392. Global Human Resources Management — (3 Units)**

*Prerequisites: HRM 305 Key Factors of Human Resources Management; HRM 315 Employment Practices and the Law; HRM 391 Compensation and Benefits*

This course introduces global issues in managing Human Resources, including cultural, legal and local market pressures on HRM functions. The course compares domestic operations with the complexities of managing an international workforce.

**HRM 393. Organization Development and Change Management — (3 Units)**

*Prerequisites: The student is expected to have a basic understanding of management foundations, to be familiar with the case study method, and to have basic presentation skills.*

The course deals with planned change efforts in organizations, covering organizational design; structure; principles of organizations; human resources training; intra-and inter-departmental communications; coordination activities; and leadership growth and development. The course considers Organizational Development and change management at the individual, team (group), and organizational levels.

**HRM 394. Human Resources Information Systems — (3 Units)**

*Prerequisites: HRM 305 Key Factors of Human Resources Management; HRM 315 Employment Practices and the Law*

Studies the development and application of information systems to the management of human resources. Includes systems for payroll, skills inventories, succession planning, labor contract negotiations and administration, and other systems.

**HRM 395. Strategic Human Resources Planning — (3 Units)**

*Prerequisite: None*

This course presents a comprehensive organization application which focus on planning for effective utilization of human resources. Topics include: strategic planning in staffing, reduction of labor surplus, labor shortage avoidance and uses of alternative measures in staffing issues. Human resources information systems will focus on the research and range and uses of the current computer applications systems. Employee protections and affirmative action plans will be addressed through understanding of the laws, the labor population and legal applications research. Management succession will be related to performance systems and employee development planning.

**HRM 402. Organizational Development and Transformation — (3 Units)**

*Prerequisite: MGT 301 Management Theory & Practice.*

Analysis of the Organizational Process and study of contemporary theories for implementing change within the organization. Examples, issues and challenges of Organization Development and Organizational Transformation will be considered. Theory is merged with practice through integration of assignments with the student's current position.

**HRM 403. Communication in Organizations — (3 Units)**

*Prerequisite: BCOM 301 Introduction to Business Communications, HRM 303 Fundamentals of Human Behavior in Organizations.*

A study of the dynamics of human communication. Communication theory and research is examined as it relates to interpersonal communication and behavior in organizations. Analyzes oral and written communication theories and focuses on internal publications particularly related to human resources.

**HRM 421. Human Relations & Values — (3 Units)**

*Prerequisite: HRM 303 Fundamentals of Human Behavior in Organizations.*

Develops an understanding of oneself and others as individuals and as members of working groups. Knowledge and skills emphasized include group dynamics and self-awareness, the impact of the self on others, free expression and better listening, and barriers to group participation. Emphasis is placed on the person in the organization and on the interactions between managers and their employees.

**HRM 430. The Managerial Process — (3 Units)**

*Prerequisites: Completion of all required lower-division and upper-division Business Administration core courses.*

Studies the theories of management as applied to decision-making in planning, organizing, staffing, directing, and controlling an organization.

**HRM 440. Organizational Behavior — (3 Units)**

*Prerequisite: HRM 430 The Managerial Process.*

Applies the behavioral sciences to topics such as: self-awareness, perception, communication, motivation, productivity, group processes, change in organizations, personal stress, and leadership processes.

**HRM 450. Human Resources Management Processes — (3 Units)**

*Prerequisite: HRM 430 The Managerial Process.*

Studies human resources within the organization including recruiting, selection, training, development, evaluating performance, compensation, and union relations, all within relevant legal constraints.

**HRM 495. Senior Project — (3 Units: 1 guided instruction/2 lab)**

*Prerequisites: Completion of all required lower- and upper-division Business Administration and Human Resources Management core courses and the upper-division Human Resources Management options courses selected by the student.*

Supervised individual application project involving a human resource topic chosen by the student with the instructor's guidance. The student will be required to define the research topic, design the implementation of the project and write a formal report. To be eligible for credit, the project must involve a broad range of human resources issues and show evidence of applying course material to a real world problem. (While it is not always possible, it is preferable that students design their project so that they can then implement it in their workplace)

*Note: May be taken concurrently with HRM 496.*

**HRM 496. Senior Project Implementation & Evaluation — (3 Units lab)**

*Prerequisite: Completion of or concurrent enrollment in HRM 495 Senior Project.*

This course involves implementation of the student's senior project and evaluation of the impact of the project. With the supervision of the instructor and cooperation from the student's work organization, the student will implement his or her project. The student will gather data regarding results achieved by the project. The results will be reported to the instructor and to the appropriate member(s) of the student's work organization.

**IBUS 301. The International Business Environment — (3 Units)**

*Prerequisite: None.*

Includes economic, legal, political, governmental, financial and cultural issues related to international business environment and the multidisciplinary development of strategies to address it. Focuses on opportunities for, threats to, and options facing the multinational or multicultural business enterprises, emphasizing host government, work force, and consumer needs, preferences, and demands and strategies for responding to them.

**IBUS 305. International Small Business Venturing — (3 Units)**

*Prerequisite: Completion of General Education core.*

This course is designed to introduce the student to the principles and issues facing a small international business. The text material is designed to educate the student to all issues faced by a business in the global economy i.e. an international business. At the end of the course the student should be able to put together a business plan that will address all aspects of starting an international business. This business plan will be the course project.

**IBUS 410. International Business Law — (3 Units)**

*Prerequisites: IBUS 301 The International Business Environment*

*Recommended: BLAW 201 Introduction to Business Law*

Covers important elements of and variation in laws governing the conduct of business in countries of particular importance to the U.S. Focuses on laws governing common overseas business activities, compliance issues they might present, and recent and anticipated developments.

**IBUS 430. Key Factors For Successful International Management — (3 Units)**

*Prerequisites: IBUS 301 The International Business Environment, MGT 301 Management Theory & Practice.*

This course covers the development and implementation of strategies for competing internationally. Topics include the rapid globalization of industries, different foreign competitive environments and business methods, new organizational forms such as strategic alliances, and networks.

Reviews US export controls; trade regulations and extraterritorial application of US laws governing international business transactions. Also examines the legal aspects of establishing an overseas operation; joint venturing abroad; using a foreign distributor; exporting technology; and the Export Administration Act, Foreign Corrupt Practices Act and relevant antitrust laws.

Presents issues and challenges for managing a multinational workforce. Discusses techniques and strategies for managing performance in multinational settings to insure effective and efficient performance. Topics include cross-cultural teams, leadership and international human resource management.

**IBUS 440. Fundamentals of International Marketing — (3 Units)**

*Prerequisites: IBUS 301 The International Business Environment, MKT 301 Introduction to Marketing.*

Covers opportunities and problems in the development and marketing of products and services for overseas customers. Includes market research methods, product and service design considerations, and promotion and advertising techniques applicable and useful in the international setting; political, legal, economic, and cultural variables that determine foreign government policy, customer tastes and preferences, and constraints on resources available to overseas marketing.

**IBUS 460. Comparative Economic Systems & Theory — (3 Units)**

*Prerequisites: IBUS 301 The International Business Environment, ECON 311 Principles of Macroeconomics.*

Covers the nature of and compares and contrasts the economic systems of the representative nations of the world. Although the primary focus is on U.S. major trading partners and leading competitors, the economic systems of Less Developed Countries (LDCs) will also be examined. This course will include relevant economic, political and philosophical theories; social and cultural variables; institutions and practices; international relations, competitiveness, cooperation; and current significant trends. In addition to covering the basic concepts, definitions, methods, theories and models, this course will also include case studies of selected economies. This will give the student the opportunity to analyze data regarding the performance of different variants within the compared economic systems.

**IBUS 493. Practicum in International Business — (2 Units)**

*Prerequisite: IBUS 301 The International Business Environment.*

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**IBUS 494. Practicum in International Business — (3 Units)**

*Prerequisite: IBUS 301 The International Business Environment.*

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**IBUS 498. Directed Individual Study in International Business — (2 Units)**

*Prerequisite: IBUS 301 The International Business Environment.*

Course content arranged with faculty.

**IBUS 499. Directed Individual Study in International Business — (3 Units)**

*Prerequisite: IBUS 301 The International Business Environment.*

Course content arranged with faculty.

**MGT 304. Performance Appraisal & Reward Methods & Systems — (3 Units)**

*Prerequisites: MGT 301 Management Theory & Practice, HRM 315 Employment Practices & the Law.*

Strategic, ethical, and legal considerations in appraising and rewarding performance at work. Discussion of various appraisal criteria, methods, and tools; feedback procedures and processes; and compensation schemes and systems. Examination of legal and other environmental factors influencing appraisal and compensation activities.

**MGT 305. The Managerial Environment — (3 Units)**

*Prerequisite: MGT 301 Management Theory & Practice.*

This course describes the current operating environment that leaders and managers must negotiate to successfully lead their organizations through a variety of contemporary issues. Examines challenges for management in a global environment. Explores organizational culture, ethics, diversity, decision-making and leadership. Studies group and team development, the importance of effective communication and the role of advanced information technology. The course will utilize case studies to build management skills.

**MGT 307. Organization Development — (3 Units)**

***Prerequisite: MGT 301 Management Theory & Practice.***

Explores theory, research and practice in systematic planning and implementation of organizational change. Focuses on theories of individual, social and organizational behavior and their application to organizational change. Considers Organizational Development at the individual, team or group, and entire organizational levels.

**MGT 308. Small Business Management — (3 Units)**

***Prerequisite: MGT 301 Management Theory & Practice.***

Identifies, analyzes, and explores methods to address issues specific to the small business, with focus on the family-owned and managed firm. A practical emphasis for those who currently or plan to work for, own, manage, or transact with a small business.

**MGT 309. Managerial Ethics & Social Responsibility — (3 Units)**

***Prerequisite: MGT 301 Management Theory & Practice.***

Explores theory and practice in the identification, evaluation, and achievement of ethical standards for interaction with co-workers, management of employees, and development and implementation of business strategy. Focuses on ethical issues to be addressed in decision making, planning, training, supervision, and transaction with stockholders. Includes case analyses.

**MGT 420. Production and Operations Management — (3 Units)**

***Prerequisite: MSC1 301 Introduction to Management Science.***

Covers effective decision-making tools and techniques for production and operations. Includes decision theory, tools, techniques, and support systems; aggregate planning; system location, layout design and maintenance; statistical applications to quality control, with an emphasis on Total Quality Management inventory and statistical process control; materials requirement planning; and forecasting.

**MGT 421. Manufacturing Management Systems — (3 Units)**

***Prerequisites: MSC1 285 Introduction to Business Statistics, MSC1 301 Introduction to Management Science.***

Covers the development and implementation of systems for production design and planning, inventory and shop floor control, and other manufacturing related tasks. Includes the nature and applications of computer-aided design and manufacturing (CAD/CAM) programs. Assignments include the design of a prototype manufacturing management system.

**MGT 422. Project Management— (3 Units)**

***Prerequisites: The student is expected to have a basic understanding of management foundations, to be familiar with the case study method, and to have basic presentation skills.***

***Pre-requisite courses: MGT 301- Management Theory & Practice; MSC1 285-Introduction to Business Statistics; MSC1 301-Introduction to Management Science .***

A course dealing with planned project execution and management in organizations; covering the organization, staffing, planning, scheduling, controlling, budgeting, and evaluation of small, intermediate, and large projects. Course work includes various current techniques such as PERT, technologies such as project management software packages; and organizational structures such as matrix support. Project Management at the individual, team (group), and organizational level.

**MGT 440. E-Commerce Business Strategies — (3 Units)**

***Prerequisite: MGT 301 Management Theory & Practice***

The course focuses on understanding the internet as a source of marketing and as a source of sales in consumer and business markets. We will examine strategic challenges and opportunities for supplier management, customer relationship management, marketing communications and new business development. We will compare traditional channels of distribution and the internet as well as internet retailing versus brick and mortar retailing.

**MGT 460. Entrepreneurship — (3 Units)**

***Prerequisite: MGT 301 Management Theory & Practice.***

Students will identify and evaluate potential opportunities and develop a plan for implementation of a business concept. The process of business plan development emphasizes concept development, followed by research, assumption verification, and implementation. Students will write a business plan, which includes an executive summary, business description, market analysis, competitive analysis, description of management team, and the implementation of actionable items in marketing, finance, and operations.

**MGT 493. Practicum in Management — (2 Units lab)**

***Prerequisite: MGT 301 Management Theory & Practice.***

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MGT 494. Practicum in Management — (3 Units lab)**

***Prerequisite: MGT 301 Management Theory & Practice.***

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MGT 498. Directed Individual Study in Management — (2 Units)**

***Prerequisite: MGT 301 Management Theory & Practice.***

Course content arranged with faculty.

**MGT 499. Directed Individual Study in Management — (3 Units)**

***Prerequisite: MGT 301 Management Theory & Practice.***

Course content arranged with faculty.

**MIS 203. Computer Hardware & Software Architecture — (3 units: 2 guided instruction/1 lab)**

***Prerequisite: CS 200 Fundamental Concepts of Information & Computer Technology.***

Introduction to the function and architecture of computer hardware and software technologies. Topics include data and instruction representations, machine architecture, peripherals and secondary storage, operating system functions, networks and programming languages.

**MIS 204. Application Development, Design, & Implementation — (3 units: 2 guided instruction/1 lab)**

***Prerequisite: MIS 203 Computer Hardware & Software Architecture.***

Uses information systems techniques to solve managerial and organizational problems of limited complexity. Includes solving formal analytic problems and implementing solutions using systems development techniques with a computer-assisted software engineering (CASE) tool. Emphasizes quality assurance, testing, and interactive systems.

**MIS 301. Business Data Communications — (3 units)**

*Prerequisites: MIS 202 – Principles of Management Information Systems or permission of your professor.*

An introduction to the concepts and technology of on-line and network-based information systems for business data communications. Emphasizes management considerations, requirements analysis, capacity planning, micro-mainframe connectivity, and decentralized transaction processing. Includes the use of both management cases and laboratory projects. This is the first class of two classes for a complete course in Modern Data Communication and Networks.

**MIS 305. Systems Development I — (3 units: 2 guided instruction/1 unit lab)**

*Prerequisite: MIS 202 Principles of Management Information Systems.*

Use information systems methodologies to solve enterprise-wide managerial and organizational problems. Students will use structured systems development methodologies to develop a simple single-user system, including using a database. Topics include database design and management systems, standard development life cycle, and development with prototyping techniques.

**MIS 307. Systems Development II — (3 units: 2 guided instruction/1 lab)**

*Prerequisite: MIS 305 Systems Development I.*

As a continuation to topics covered in Systems Development I, this course uses information systems methodologies to solve more complex enterprise-wide managerial and organizational problems. Students will use structured systems development methodologies to develop a multi-user system, including using a database. Topics include project management techniques, security techniques, and system testing and implementation.

**MIS 308. Management of Information Systems — (3 units)**

*Prerequisite: MIS 305 Systems Development I. MIS 307 System Development II.*

*Students must have:*

**A personal computer with MS-Office installed.**

**Access to the Internet (World Wide Web).**

**An e-mail address.**

*A working knowledge of, and familiarity with, application software in general.*

This is a comprehensive course in design and analysis of computer-based information systems in business organizations. Criteria for the design of the system and the selection of related hardware and software, installation, implementation, and administration of the computerized information systems are discussed. Focus is on studying the process of the system development life cycle. Attention will also be given to the functions of, and the roles played by, each management and professional level position normally associated with an MIS department. The student is required to present an information system project for a selected company.

**MIS 410. Decision Support & Expert Systems — (3 units)**

*Prerequisites: MIS 202 Principles of Management Information Systems, MIS 204 Application Development, Design, & Implementation.*

An examination of the manager's responsibilities for problem solving and decision making and of those areas in which computers can be used as tools to gain the insight needed to support selection of decision alternatives. This course goes beyond traditional file and information manipulation programs to cover systems that follow reasoned, logical patterns based on criteria specified by an expert, including facts, rules, ad hoc procedures, and the manipulation of quantified uncertainty factors. Students will be provided with the software tools for implementing decision support and expert systems and encouraged to apply the software to solve problems.

**MIS 412. Information Center Concept & Management — (3 units)**

*Prerequisites: MIS 202 Principles of Management Information Systems, MIS 204 Application Development, Design, & Implementation.*

Consideration of function and role of the Information Center, a vehicle for organizational support of end-user computing. Management issues dealing with the level and mix of services provided and the placement of the Information Center within the organization. Discusses control and security matters.

**MIS 413. Local Area Networks Implementation & Management — (3 units)**

*Prerequisite: MIS 301 Business Data Communications.*

*You will participate in a laboratory once every other week. Lab exercises will provide hands-on experience with networking equipment described in the course. In lab assignments, you will measure and compare the performance of data network hardware as well as write application programs (i.e., clients and servers) that communicate over the Internet. For the experiments you must know college-level Calculus math.*

Principles and specific implementation of local area network systems, including predominant networking hardware and software products, local area networking methodologies, and communicating with peer dissimilar networks. Extensive use will be making of cases, qualifying students to participate in projects that will define, select and implement a LAN to satisfy specific applications requirements.

**MIS 415. Advanced Database Concepts — (3 units)**

*Prerequisite: MIS 301 Business Data Communications and entry-level computer literacy.*

Information is stored in databases and is considered essential for business success. This course will examine the tools and techniques used in the construction of databases that help overcome the complexities involved in storing vast amounts of data. This course also explores the methods used to store and retrieve data and the ways in which businesses utilize retrieved data. This is a hands-on course.

**MIS 416. Human-Computer Interface — (3 units)**

*Prerequisite: MIS 204 Application Development, Design, & Implementation.*

The goal of Human Computer Interface-HCI is to ensure that the systems produced by designers for people to use are comprehensible, consistent and usable. Its central concern is the good design of socio-technical systems. The discipline of HCI draws its inspiration and techniques from a broad range of subjects-psychology, ergonomics, cognitive science, computer science and software engineering.

This course will cover the study of technology for human-computer interface. It will emphasize the research-based principles and guidelines of effective user-interface design in information systems. Topics include user-system dialogues, graphical and natural language interfaces, user modeling, hypertext and hypermedia, and usability engineering.

**MIS 420. Information Systems Professionalism & Ethics — (3 units)**

*Prerequisite: MIS 202 Principles of Management Information Systems.*

Surveys the issues and responsibilities facing the information systems practitioner. Topics include computer waste and mistakes, computer crime, privacy, ergonomic issues in the work environment, professional training and licensing, and other ethical information systems issues.

**MIS 440. Internet Technology & E-Commerce — (3 units)**

*Prerequisite: MIS 301 Business Data Communications.*

This course focuses on the structure and function of the Internet and the information superhighway concept. Topics include TCP/IP Protocol Suite, Internet Information Services (e-mail, file transfer, Telnet), information resource discovery (World Wide Web and search engines), intra-networking within a corporation, network security and firewalls. Students will use these Net-centric technologies to design and implement e-commerce

systems capable of interacting with marketing, production, accounting, and external electronic payment. Such Web systems enable customers to examine products and pricing options, place orders, track their progress, make payments, and check their account status directly over the Internet.

**MIS 493. Practicum in Management Information Systems — (2 units)**

***Prerequisite:* MIS 202 Principles of Management Information Systems.**

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MIS 494. Practicum in Management Information Systems — (3 units)**

***Prerequisite:* MIS 202 Principles of Management Information Systems.**

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MIS 498. Directed Individual Study in Management Information Systems — (2 units)**

***Prerequisite:* MIS 202 Principles of Management Information Systems.**

Course content arranged with faculty.

**MIS 499. Directed Individual Study in Management Information Systems — (3 units)**

***Prerequisite:* MIS 202 Principles of Management Information Systems.**

Course content arranged with faculty.

**MSCI 386. Fundamentals of Quantitative Analysis — (3 units)**

***Prerequisites:* MSCI 285 Introduction to Business Statistics, MSCI 301 Introduction to Management Science.**

Identifies, presents, and explains quantitative techniques to optimize managerial decision making. Includes decision theory, tools, and techniques under conditions of certainty and uncertainty; model building; linear programming; and simulation

**MKT 302. Introduction to Product Management (3 units)**

***Prerequisite:* MKT 301 Introduction to Marketing.**

This course will take you through the stages of new product development. It will cover from the identity of an opportunity up to the actual launch of the new product in the marketplace.

**MKT 303. Fundamentals of Retailing (3 units).**

***Prerequisite:* MKT 301 Introduction to Marketing.**

Covers retailing issues, and methods, procedures, and practices to address them effectively. Includes stock planning, purchasing, and control through accounting; inventory control; markup; pricing policy and strategy; merchandising; and advertising. Focuses on retail management, including store layout and location; organizational design and staffing; personnel recruitment, selection, training, evaluation, and supervision; and control techniques and systems.

**MKT 306. Introduction to Advertising (3 units)**

***Prerequisite:* MKT 301 Introduction to Marketing.**

This course is designed to provide you with comprehensive instruction to the fascinating and changing field of

advertising, with emphasis on understanding the motivations and widespread effects of the practice. Examined will be the background and role of advertising, its planning and management, media placement, ad creation as well as the various environments involved in this activity, along with current developments. Assignments include the development of an ad campaign.

**MKT 335. Introduction to Consumer Behavior (3 units)**

*Prerequisite: MKT 301 Introduction to Marketing.*

This course provides the knowledge and skills necessary to perform useful consumer analyses to be used in developing effective marketing strategies. The course discusses: affect and cognition-how consumers think; consumer behavior-refers to the physical actions of consumers; consumer environment-refers to external influences to consumers; and marketing strategies-by which marketing motivates.

**MKT 336. Marketing Communications (3 units)**

*Prerequisite: MKT 301 Introduction to Marketing.*

Recommended: BCOM 301 Business Communications.

Covers behavior, communication, and decision theory; practical applications to advertising and promotion, including use of decision models; the nature, applications, and relative utility of available communication technology; and legal and institutional considerations.

**MKT 380. Marketing Research Methods (3 units)**

*Prerequisites: MKT 301 Introduction to Marketing, MSCI 285 Introduction to Business Statistics.*

Covers the application of the scientific method to gathering, transforming, and analyzing data for marketing decision making. Focuses on the formulation of hypotheses to define marketing problems for research, hypothesis testing through the design of research, data-gathering procedures, measurement theory and practice, basic sampling and statistical techniques, and the evaluation and use of data.

**MKT 430. Marketing Management (3 units)**

*Prerequisites: MGT 301 Management Theory & Practice, MKT 301 Introduction to Marketing.*

This course provides a comprehensive overview of the science of Marketing, with special emphasis placed upon the kind of information that Marketing Managers need in order to make strategic decisions. In addition to the "Four Ps" (Product, Price, Place, Promotion) being thoroughly covered, we also look at some of the latest trends in marketing, including e-Commerce and the internet, and the way this is changing the relationship between wholesalers and retailers as well as retailers and consumers.

**MKT 440. Internet Marketing (3 units)**

*Prerequisite: MKT 301 Introduction to Marketing.*

The impact of the Internet in current years has surprisingly forced companies and individuals to change their way of conducting business. While in recent years the opportunities in doing business on the Internet has increased dramatically, at the same time, in the last few months, we have seen that many of these companies have closed their doors due to lack of sales and funding. Executives need to assess how and why they fit in the marketplace and more importantly, where they want to be tomorrow and how the Internet will get them there. This course discusses the basic fundamentals of marketing and internet marketing, the impact of web design, and strategies and tactics to use when doing business through the Internet.

**MKT 493. Practicum in Marketing (2 units lab)**

*Prerequisite: MKT 301 Introduction to Marketing.*

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, verified by a

proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MKT 494. Practicum in Marketing (3 units lab).**

***Prerequisite: MKT 301 Introduction to Marketing.***

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MKT 498. Directed Individual Study in Marketing (2 units)**

***Prerequisite: MKT 301 Introduction to Marketing.***

Course content arranged with faculty.

**MKT 499. Directed Individual Study in Marketing (3 units)**

***Prerequisite: MKT 301 Introduction to Marketing.***

Course content arranged with faculty.

**MGT 492. Strategic Planning & Management — (3 Units)**

***Prerequisite: This is the Capstone course for the Bachelor of Science in Business Administration (B.S.B.A.) and is the culmination of all business and management study for this degree. The prerequisite for this course is completion of all other required courses in your business program.***

As a “capstone” course, the material will encompass all previous efforts during your studies for maximizing competitiveness in the industrial and macroscopic environment. The focus of this course is on application of knowledge highlighting the importance of, key issues reflected in and effective methods for, corporate goal formulation, internal and external analysis, business and corporate level strategy, and supportive organizational structures, processes, and systems. This course will cover current business issues and developments as well as assist students in gaining new knowledge and understanding about the management of corporate operations. While we will spend some efforts in the review of the conceptual and practical aspects of business policies and policy decision making by utilizing all the concepts, theories, and tools that were presented in previous courses—the focus is a “practioner’s approach”. Students will analyze and recommend comprehensive and workable approaches to case studies and be responsible for developing solutions to improve existing business plans. The necessity to view and grasp everything in terms of the whole organization is a skill that is difficult to learn, but is achievable through study and concentrated efforts to read and complete the requirements of this capstone course.

## **Master of Business Administration (MBA) Degree Program**

CNU's Business Administration degree programs are modeled closely after the *American Assembly of Collegiate Schools of Business* accreditation standards (AACSB). CNU bachelor's and master's graduates in Business Administration are individuals equipped with the broadest range of capabilities to maximize U.S. competitiveness, effectively meeting the challenges of a changing international, economic, legal, political and technological environment.

### **Master of Business Administration Program Objectives:**

The MBA degree prepares students with a general managerial perspective. The MBA program objective is to provide an in-depth study in: ethical and global issues, the influence of political, social, legal, regulatory, environmental and technological issues, and the impact of demographic diversity on organizations.

### **MBA Program Learning Outcomes:**

- An ability to design and implement management and marketing principles including recent, emerging, and anticipated developments in strategic and operational business planning in the context of market competition, social, legal, financial, technological and ecological environments.
- An ability to analyze, design, and implement accounting and financial procedures including recent and emerging developments used in businesses in the context of market competition, government policies and regulations, impact of inflation, interest rates, international trade, security and financial institutions.
- An ability to identify and analyze managerial and organizational informational needs, and to apply informational technologies and statistical techniques and procedures, including recent and emerging developments in business decision-making.
- An in-depth understanding and appreciation of behavioral and human resource management issues, including recent and emerging developments found in organizations including motivation, cultural diversity, personality, recruiting, selection, training, developing employees, wage administration, and union relations.
- An in-depth understanding and appreciation of the multi-faceted legal, political, governmental, financial and cultural issues related to international business environments, including recent and emerging developments and strategies to address them.
- An ability to analyze, design and implement procedures and systems connected with Business Administration with a focus on accounting, finance, human resources management, management, management information systems, international business, or marketing.
- An understanding of the breadth of knowledge required for successful business management, and the ability to integrate knowledge from diverse disciplines, and conduct interdisciplinary research and experimentation.
- An ability to communicate effectively.

The Master of Business Administration (MBA) degree program requires possession of a Bachelor's degree. For students with a Bachelor's Degree in Business Administration, the program requires completion of 36 units of coursework: 18 units of Second Year Core courses, 12 units of Elective courses and 6 units of a Master's Thesis or Comprehensive Exam.

For students holding a bachelor's degree in another discipline, the program requires 45 units of coursework: 9 units of First Year Core courses, 18 units of Second Year Core courses, 12 units of Elective courses and 6 units of a Master's Thesis or Comprehensive Exam.

No more than 9 units can be taken at the 400 level.

## **MASTER OF BUSINESS ADMINISTRATION DEGREE PROGRAM REQUIREMENTS**

Candidates are expected to have acquired basic math skills and working knowledge of computers. Students who have not had a course in basic math skills or computer concepts involving database management and spreadsheet software must either a) demonstrate to faculty that they have the requisite proficiency in these areas or b) take the necessary courses. Students must own or have access to a computer.

Those without a Business Administration academic background will be required to complete pre-requisite courses.

Candidates must have a Bachelor's degree with a 3.0 cumulative GPA to be eligible for the graduate program, or in special circumstances, may be accepted with approval from the Faculty Advisor and Academic Dean. Students are expected to maintain a 3.0 GPA in order to complete the program. In addition, each degree program requires completion of the graduate core plus either a) graduate research class and thesis, or b) graduate research class and successful passage of a comprehensive exam.

Credit is assigned in graduate guided instruction and labs for completion of course requirements that include both developmental and evaluative components based upon faculty contact throughout instruction. Students must satisfy prerequisite requirements for any courses selected.

The MBA is a breadth degree. Lab work is assigned on an individual basis and is determined by faculty assessment.

The Master of Business Administration (MBA) requires successful completion of 36 units of coursework for those entering with a Bachelor's degree in Business Administration. Students entering the program with a Bachelor's degree from another discipline will be required to take the First Year MBA Core courses and complete a total of 45 units of coursework.

### **BUSINESS ADMINISTRATION**

First Year Graduate Core:	9 units	----- (Waived with an undergraduate business degree)
Second Year:	18 units	----- (Required for all MBA students)
MBA Electives	12 units	
Master's Thesis or Comprehensive exam	6 units	
<b>TOTAL</b>	<b>45 units</b>	

#### **Elective Areas:**

Accounting

Business Elective Credit

Business Law

Economics

Finance

Health Care Management

Human Resources Management

International Business Administration

Management

Management Information Systems

Management Science

Marketing

## **Master of Business Administration (MBA)**

### **First Year Graduate Pre-Requisite Core (9 Units)**

#### *Waived with an Undergraduate Business Degree*

<u>MGT 501</u>	Graduate Management Theory & Practice	3 units
<u>MKT 501</u>	Graduate Marketing	3 units
<u>MSCI 585</u>	Graduate Business Statistics	3 units

### **Second Year Graduate Core (18 Units)**

#### **Required of All MBA Students**

<u>ACCT 501</u>	Graduate Principles and Procedures of Financial Accounting	3 units
<u>ECON 501</u>	Graduate Economic Analysis	3 units
<u>FIN 501</u>	Graduate Financial Theory & Policy	3 units
<u>MGT 520</u>	Graduate Production & Management System Analysis & Development	3 units
<u>MGT 592</u>	Graduate Strategic Planning & Management	3 units
<u>MIS 502</u>	Graduate Computers & Management Information Systems	3 units

### **Electives (Select 12 units)**

A minimum of 12 units of electives must be selected from among the graduate courses offered by the College of Business Administration. Although not required a student may select 12 units of electives in any one area. No more than 9 units can be taken at the 400 level.

<u>Accounting</u>
<u>Business Elective Credit</u>
<u>Business Law</u>
<u>Economics</u>
<u>Finance</u>
<u>Health Care Management</u>
<u>Human Resources Management</u>
<u>International Business Administration</u>
<u>Management</u>
<u>Management Information Systems</u>
<u>Management Science</u>
<u>Marketing</u>

### **Master's Thesis or Comprehensive Exam (6 units)**

<u>MBAT 599A</u>	Directed Graduate Research	3 units
<u>MBAT 599B</u>	Master's Thesis or	3 units
<u>MBAC 599A</u>	Directed Comprehensive Studies	3 units
<u>MBAC 599B</u>	Graduate Comprehensive Examination	3 units

**MGT 501. Graduate Management Theory & Practice — (3 Units)**

*Prerequisite: Graduate Standing. The Microsoft PowerPoint version that accompanies MS Word 97 or 2000 is also required.*

Covers various management approaches, including recent, emerging, and anticipated developments. Focuses critical attention on relevant theory, research, and practice; facilitates the development of analytical and research skills to encourage further contributions to the field; and identifies important and current employee issues for application of existing and future management knowledge.

**MKT 501. Graduate Marketing (3 units)**

*Prerequisite: Graduate Standing.*

Covers issues in marketing policy, develops management knowledge and skills to address them, and identifies recent and anticipated environmental developments which relate to marketing.

**MSCI 585. Graduate Business Statistics — (3 units)**

*Prerequisite: Graduate Standing.*

Emphasizes analyzing data, interpreting the output and utilizing skills to effectively apply statistical techniques to the design and evaluation of research regarding business practice. Included are the knowledge and skills to select statistical procedures appropriate to a research task and design, and the performance of accurate calculations in applying them. Covers concepts and techniques regarding problems, case studies, data analysis and the interpretation of computer output via Minitab and excel.

- A First Look at Statistics and Data Collection & Data Presentation Using Descriptive Graphs
- Data Summaries using Descriptive Measures & Probability Concepts
- Discrete Probability Distributions
- Continuous Probability Distributions
- Statistical Inference and Sampling
- Hypothesis Testing for the Mean and Variance of a Population
- Inference Procedures for Two Populations
- Analysis of Variance (ANOVA)
- Quality Improvement
- Applications of the Chi-Square Statistic
- Correlation and Simple Linear Regression
- Quantitative Business Forecasting
- Nonparametric Statistic

**ACCT 501. Graduate Principles and Procedures of Financial Accounting — (3 units)**

*Prerequisite: Graduate Standing.*

Detailed examination of standard financial accounting, including major financial statements, double-entry accounting method, accrual and cash accounting, and specific analysis of assets, liabilities, and owner's equity accounts.

**ECON 501. Advanced Economic Analysis — (3 units)**

*Prerequisites: Graduate Standing.*

This course develops an overview of economics theory for analyzing managerial operations. This course will analyze customer behavior, demand functions and elasticity of demand, demand estimation, elementary techniques and multiple regression analyses, forecasting, measurement of production functions, costs, and profit. This course will further examine planning and control, pricing-output-and non-price competition in different market structures, the economic role of government, and capital budgeting-financial policy. Finally this

course provides the necessary statistical tools to empirically analyze a business/industry for optimal managerial decision making.

**FIN 501. Graduate Financial Theory & Policy — (3 Units)**

*Prerequisite: ACCT 501 Graduate Financial Theory & Policy; ECON 501 Graduate Economic Analysis*

Directs critical attention to financial theory, focuses on its direct application to business analysis and management, and covers a wide range of financial concepts.

**MGT 520. Graduate Production & Management Systems Analysis & Development — (3 Units)**

*Prerequisite: Graduate Standing.*

This course identifies key production problems, including planning, scheduling, layout, and control; applies the system approach to their resolution; and includes recent developments, such as decision analysis and large-scale modeling.

**MGT 592. Graduate Strategic Planning & Management — (3 Units)**

*Prerequisite: FIN 501 Graduate Financial Theory & Policy; MGT 501 Graduate Management Theory & Practice; MKT 501 Graduate Marketing. Students need access to Microsoft Office version 97 or 2000.*

Introduction to methods for maximizing competitiveness in the industrial and macroscopic environment. Focuses on the importance of, key issues reflected in and effective methods for, corporate goal formulation, internal and external analysis, business and corporate level strategy, and supportive organizational structures, processes, and systems. Includes case analyses. Assignments include analysis, evaluation, and if needed, modification or design of strategy for existing company, deliverable as a term project as well as consultant report to client.

**MIS 502. Graduate Computers & Management Information Systems — (3 units)**

*Prerequisite: None. You should have completed prior, lower level course in Information Systems, or have the appropriate work experience. For each of the case studies that students will complete in this course, students are expected to prepare PowerPoint slides.*

An introduction to the study and practice of information systems management. The objective is to facilitate students' understanding of the structure, development, and management of information systems that can support a wide range of organizational functions at various levels with a view to develop a capability to analyze and/or to design an information system to satisfy business needs. Component parts of the information system are studied, together with the interactions between such components.

The discussion assumes logical reasoning to be the core of conceptualization. Thus, much of the material covered appears to be a re-statement of common sense logic, which in fact it is. You will frequently observe formalized statements of natural reasoning in the context of computer operations and information systems structure and application.

Electives (Select 12 units)

Accounting

**ACCT 493. Practicum in Accounting — (2 units)**

*Prerequisite: ACCT 201 Introduction to Financial Accounting.*

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper will be assigned and graded for evaluation purposes.

**ACCT 494. Practicum in Accounting — (3 units)**

***Prerequisite: ACCT 201 Introduction to Financial Accounting.***

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper will be assigned and graded for evaluation purposes.

**ACCT 498. Directed Individual Study in Accounting — (2 units)**

***Prerequisite: ACCT 201 Introduction to Financial Accounting.***

Course content to be arranged with faculty.

**ACCT 499. Directed Individual Study in Accounting — (3 units)**

***Prerequisite: ACCT 201 Introduction to Financial Accounting.***

Course content to be arranged with faculty.

**ACCT 501. Graduate Principles and Procedures of Financial Accounting — (3 units)**

***Prerequisite: Graduate Standing.***

Detailed examination of standard financial accounting, including major financial statements, double-entry accounting method, accrual and cash accounting, and specific analysis of assets, liabilities, and owner's equity accounts.

**ACCT 502. Principles of Managerial Accounting — (3 units)**

***Prerequisite: ACCT 501 Graduate Principles and Procedures of Financial Accounting.***

Detailed examination of accounting data and concepts for managerial planning and control, including cost accounting and responsibility accounting.

**ACCT 503. Advanced Financial Accounting — (3 units)**

***Prerequisite: ACCT 501 Graduate Principles and Procedures of Financial Accounting.***

Covers the fundamentals of reporting and accounting for income, losses, assets, liabilities, and owners' equity for sole proprietorships, partnerships and corporations. Examines key generally accepted accounting principles.

**ACCT 505. Advanced Auditing — (3 units)**

***Prerequisite: ACCT 501 Graduate Principles and Procedures of Financial Accounting.***

This course covers applications of recent developments in and critical analysis of auditing procedures, regulations, and standards under generally accepted auditing standards.

The focus of the course will be to develop the ability to analyze and apply the basic theory and practice of financial accounting and auditing via the case study method. In this course, students will develop an understanding of the financial reporting process and the means by which auditors validate or lend credibility to the information presented in these statements. The emphasis is on the commonalties of recognition, measurement, and disclosure rules.

Auditing topics covered include (1) Generally Accepted Auditing Standards; (2) audit risk, reporting, evidence, and planning; (3) internal control; (4) ethical responsibilities of the accountant; (5) ethical responsibilities of the auditor; (6) professional roles and issues; (7) evidence; and (8) legal liability.

**ACCT 511. Advanced Individual Income Tax — (3 units)**

***Prerequisite:*** ACCT 501 *Graduate Principles and Procedures of Financial Accounting.*

Covers federal individual income tax, including applicable regulations, calculation procedures and methods for planning and accounting for it. Includes income inclusions and exclusions; deductions and losses; dependents; business and employee expenses; tax credits; self-employment; capital gains and losses; and retirement accounts.

**ACCT 512. Advanced Business Income Tax — (3 units)**

***Prerequisite:*** ACCT 511 *Advanced Individual Income Tax. Advanced analysis of topics covered in ACCT 312. Fundamentals of Business Income Tax.*

Covers the regulations governing calculation of and planning and accounting for federal income taxation of business entities, including corporations, partnerships, sole proprietorships, joint ventures, estates, and trusts.

**ACCT 520. Advanced Accounting Information Systems — (3 units)**

***Prerequisites:*** ACCT 502-*Principles of Managerial Accounting*

This course teaches from an accounting rather than a management information systems perspective. This course has balanced coverage of systems, electronic data processing controls, and provides students with the most important topics pertaining to the auditor's computer assurance responsibilities. Advanced Accounting Information Systems topics include:

- A model for processing accounting information
- Managerial accounting systems
- Systems concepts and accounting
- Systems tools, computer software, configurations, data storage, and data processing methods
- File processing methods, implementing database management systems, and information system controls
- Auditing, assurance, and internal control
- Computer operations, data management systems, system development, maintenance activities, and electronic commerce systems
- Computer assisted audit tools and techniques
- CAATs for data extractions and analysis
- Auditing the revenue cycle, the expenditure cycle and fraud detection

**ACCT 593. Advanced Practicum in Accounting — (2 units)**

***Prerequisite:*** *Graduate Standing.*

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**ACCT 594. Advanced Practicum in Accounting — (3 units)**

***Prerequisite:*** *Graduate Standing.*

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**ACCT 598. Advanced Directed Individual Study in Accounting — (2 units)**

***Prerequisite:*** *Graduate Standing.*

Course content arranged with faculty.

**ACCT 599. Advanced Directed Individual Study in Accounting — (3 units)**

***Prerequisite: Graduate Standing.***

Course content arranged with faculty.

Business Elective Credit

**BSAD 496 A/B — (3 units each):**

Upper division business elective credit. Credit can be given for upper division business courses taken at accredited universities recognized by the US Dept. of Education or CHEA and subject to approval by the Dean. Only grades of C or better will be transferred.

**BSAD 596 A/B — (3 units each):**

Graduate business elective credit. Credit can be given for graduate business courses taken at accredited universities recognized by the US Dept. of Education or CHEA and subject to approval by the Dean. Only grades of B or better will be transferred.

**Business Law**

**BLAW 420. Law of Sales Contracts (Uniform Commercial Code) — (3 units)**

***Prerequisite: BLAW 201-Business Law I; BLAW 301 Business Law II***

This course covers the laws pertaining to the sales of goods, including the formation, terms and performance of sales contracts; remedies for breach of sales contracts and products liability. It also includes negotiable instruments, creditors' rights and bankruptcy, personal and real property, insurance, wills, trusts, elder law and professional liability and accountability.

**BLAW 425. Intellectual Property and Cyber law — (3 units)**

***Prerequisites: BLAW 201-Business Law I; some previous coursework related to law***

An advanced course investigating the distinct applications of law in cyberspace. The course will cover a variety of topics, including intellectual property rights, civil and criminal jurisdiction, and free speech issues. Focuses on the challenges posed by the internet to traditional notions of regulation, federal and local control, and jurisdiction over individuals and corporations. Students should emerge from the course with a grasp of the practical and the theoretical difficulties in applying traditional structures to cyberspace, and a keen sense of the current state of development.

**Economics**

**ECON 501. Advanced Economic Analysis — (3 units)**

***Prerequisites: Graduate Standing.***

This course develops an overview of economics theory for analyzing managerial operations. This course will analyze customer behavior, demand functions and elasticity of demand, demand estimation, elementary techniques and multiple regression analyses, forecasting, measurement of production functions, costs, and profit. This course will further examine planning and control, pricing-output-and non-price competition in different market structures, the economic role of government, and capital budgeting-financial policy. Finally this course provides the necessary statistical tools to empirically analyze a business/industry for optimal managerial decision making.

## **Finance**

### **FIN 430. Financial Management — (3 Units)**

*Prerequisites: MGT 301 Management Theory & Practice, FIN 301 Principles of Finance*

*Competency in Microsoft Excel and Word and the utilization of the financial functions available in Excel and tools provided by Blackboard.*

This course is designed to provide students with experiential learning in finance utilizing comprehensive cases. Most cases are derived from actual situations from which managers would gain valuable experience.

### **FIN 435. Management of Financial Institutions — (3 units)**

*Prerequisites: FIN 301 Principles of Finance; ECON 311 Principles of Macroeconomics*

Focuses on the nature of the finance industry and on the development, operation, and management of firms within it. Emphasizes the sources and uses of funds and applicable government regulations.

### **FIN 493. Practicum in Finance — (2 Units lab)**

*Prerequisite: FIN 301 Principles of Finance.*

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, which is to be verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

### **FIN 494. Practicum in Finance — (3 Units lab)**

*Prerequisite: FIN 301 Principles of Finance.*

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, which is to be verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

### **FIN 498. Directed Individual Study in Finance — (2 Units)**

*Prerequisite: FIN 301 Principles of Finance.*

Course content arranged with faculty.

### **FIN 499. Directed Individual Study in Finance — (3 Units)**

*Prerequisite: FIN 301 Principles of Finance.*

Course content arranged with faculty.

### **FIN 501. Graduate Financial Theory & Policy — (3 Units)**

*Prerequisite: ACCT 501 Graduate Financial Theory & Policy; ECON 501 Graduate Economic Analysis*

Directs critical attention to financial theory, focuses on its direct application to business analysis and management, and covers a wide range of financial concepts.

### **FIN 508. Advanced Corporate Finance — (3 Units)**

*Prerequisite: FIN 501 Graduate Financial Theory & Policy.*

Detailed examination of capital budgeting, capital structure and dividend policy, corporate financing, and financial planning.

### **FIN 510. Advanced Investment Analysis — (3 Units)**

*Prerequisite: FIN 501 Graduate Financial Theory and Policy.*

The field of finance can be viewed from three perspectives: 1. Individual market agents making decisions to supply capital to markets 2. Firms demanding capital from the market and deciding how to raise funds 3. The capital market acting as a pricing mechanism to clear demand and supply. This course in investments focuses on

(1) and (3). We examine how individuals and their agents make choices among investment alternatives which have uncertain payoffs over multiple time periods. An understanding of risk and return for individual securities as well as portfolios of securities is used to characterize these decisions.

**FIN 593. Advanced Practicum in Finance — (2 Units)**

***Prerequisite: Graduate Standing.***

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**FIN 594. Advanced Practicum in Finance — (3 Units)**

***Prerequisite: Graduate Standing.***

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**FIN 598. Advanced Directed Individual Study in Finance — (2 Units)**

***Prerequisite: Graduate Standing.***

Course content arranged with faculty.

**FIN 599. Advanced Directed Individual Study in Finance — (3 Units)**

***Prerequisite: Graduate Standing.***

Course content arranged with faculty.

**Health Care Management**

**HCM 500. Management of Complex Health Care Organizations — (3 Units)**

***Prerequisite: Graduate Standing.***

The analysis of operational activities and managerial functions essential to the health care delivery system will be examined and discussed. Special emphasis will be placed on the manager's role in developing and maintaining an effective system for providing health care services. The organizational aspects and managerial approaches of delivering health care services within various institutional arrangements will be discussed. The approach to management is the functional emphasis.

Human Resources Management

**HRM 402. Organizational Development and Transformation — (3 Units)**

***Prerequisite: MGT 301 Management Theory & Practice.***

Analysis of the Organizational Process and study of contemporary theories for implementing change within the organization. Examples, issues and challenges of Organization Development and Organizational Transformation will be considered. Theory is merged with practice through integration of assignments with the student's current position.

**HRM 403. Communication in Organizations — (3 Units)**

***Prerequisite: BCOM 301 Introduction to Business Communications, HRM 303 Fundamentals of Human Behavior in Organizations.***

A study of the dynamics of human communication. Communication theory and research is examined as it relates to interpersonal communication and behavior in organizations. Analyzes oral and written communication theories and focuses on internal publications particularly related to human resources.

**HRM 421. Human Relations & Values — (3 Units)**

*Prerequisite: HRM 303 Fundamentals of Human Behavior in Organizations.*

Develops an understanding of oneself and others as individuals and as members of working groups. Knowledge and skills emphasized include group dynamics and self-awareness, the impact of the self on others, free expression and better listening, and barriers to group participation. Emphasis is placed on the person in the organization and on the interactions between managers and their employees.

**HRM 430. The Managerial Process — (3 Units)**

*Prerequisites: Completion of all required lower-division and upper-division Business Administration core courses.*

Studies the theories of management as applied to decision-making in planning, organizing, staffing, directing, and controlling an organization.

**HRM 440. Organizational Behavior — (3 Units)**

*Prerequisite: HRM 430 The Managerial Process.*

Applies the behavioral sciences to topics such as: self-awareness, perception, communication, motivation, productivity, group processes, change in organizations, personal stress, and leadership processes.

**HRM 450. Human Resources Management Processes — (3 Units)**

*Prerequisite: HRM 430 The Managerial Process.*

Studies human resources within the organization including recruiting, selection, training, development, evaluating performance, compensation, and union relations, all within relevant legal constraints.

**HRM 495. Senior Project — (3 Units: 1 guided instruction/2 lab)**

*Prerequisites: Completion of all required lower- and upper-division Business Administration and Human Resources Management core courses and the upper-division Human Resources Management options courses selected by the student.*

Supervised individual application project involving a human resource topic chosen by the student with the instructor's guidance. The student will be required to define the research topic, design the implementation of the project and write a formal report. To be eligible for credit, the project must involve a broad range of human resources issues and show evidence of applying course material to a real world problem. (While it is not always possible, it is preferable that students design their project so that they can then implement it in their workplace)

*Note: May be taken concurrently with HRM 496.*

**HRM 496. Senior Project Implementation & Evaluation — (3 Units lab)**

*Prerequisite: Completion of or concurrent enrollment in HRM 495 Senior Project.*

This course involves implementation of the student's senior project and evaluation of the impact of the project. With the supervision of the instructor and cooperation from the student's work organization, the student will implement his or her project. The student will gather data regarding results achieved by the project. The results will be reported to the instructor and to the appropriate member(s) of the student's work organization.

**HRM 501. Ethics & Social Responsibility — (3 Units)**

*Prerequisite: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes.*

The interrelationship between government, business, and society are examined with the view that managers must constantly adapt to the realities of the economic, political, and social environment of business. Management must consider its social responsibility in resolving issues that include values, ethics, and beliefs underlying its decisions. Strategic management for competitiveness, within the business and society context, ethical decision making, corporate culture, and moral reasoning are also examined. Global competitiveness and multi-national business-government relations are discussed.

**HRM 502. Organizational Leadership — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes.*

Application of behavioral science knowledge to organizational problems through programs of planned change. Focuses on the diagnostic techniques and intervention strategies used in managing system wide organizational change.

**HRM 503. Employment & Labor Law — (3 Units)**

*Prerequisite: HRM 450 Human Resources Management Processes.*

Analyzes the application of current statutory and case law and administrative agency regulations related to EEO, Affirmative Action, labor relations, occupational safety and health, compensation issues, Americans with Disabilities Act, and other fair employment practices.

**HRM 506. Organizational Communication — (3 Units)**

*Prerequisite: HRM 430 The Managerial Process.*

Communication theory and research are examined as they relate to interpersonal communication and behavior in organizations. Analyzes oral and written communication theories and focuses on internal publications particularly related to human resources.

**HRM 507. Organizational Development and Intervention — (3 Units)**

*Prerequisites: HRM 440 Organizational Behavior, HRM 450 Human Resources Management Processes.*

Focuses on the processes by which behavioral science knowledge and practices are used to help organizations achieve greater effectiveness; including improved quality of life, increased productivity, and improved product and service quality through strategic planning and interventions.

**HRM 508. Strategic Human Resources Planning — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 501 Ethics & Social Responsibility, HRM 503 Employment & Labor Law.*

Planning for effective utilization of human resources in organizations is explored. Topics include: human resources strategic planning, human resources information systems, employee protection, affirmative action, management succession and development planning and human resources-needs forecasting.

**HRM 510. International Human Resources Management — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law.*

This course examines global issues in managing human resources, including cultural, legal, and local market pressures on HRM functions, and compares domestic operations with the complexities of managing an international workforce. This course will examine international human resources management, particularly firm-level human resources strategies in the international competitive environment. The relationships between the external environment, organizational factors, and international human resources management strategies and practices will be studied from both theoretical and practical perspectives. The subject will include topics such as strategic issues for international human resources management, human resources management in a variety of international organizational forms, cross-cultural issues, and expatriate management.

**HRM 520. Human Resources Information Systems — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law*

Studies the development and application of information systems to the management of human resources.

Includes systems for payroll, skills inventories, succession planning, labor contract negotiations and administration, and other systems.

**HRM 530. Labor Relations: Process & Law — (3 Units)**

***Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law***

A study of the practice of labor relations including the organizing process, collective bargaining, labor contract administration, union structure and issues, and the influence of external labor market factors on labor relations.

**HRM 540. Compensation Design & Administration — (3 Units)**

***Prerequisites: HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law***

This course focuses on the effective management of employee compensation and benefits in contemporary organizations. The course includes emerging issues in compensation. Compensation is studied from the organization's perspective rather than from the view of the individual employee or society. The content of the course applies to organizations large and small, public and private. Terminology may be adapted but the theories/processes of good compensation decision-making remain stable across various types of organizations. The goals of compensation administration are to design pay systems that elicit desired employee behaviors at work; to motivate employees to join, stay and perform at high levels; and for the organization to remain ethical and legal in its compensation programs. This course provides an overview of how an organization is to accomplish these purposes.

**HRM 550. Performance Appraisal Systems — (3 Units)**

***Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 501 Ethics & Social Responsibility, HRM 503 Employment & Labor Law.***

Various systems used to evaluate employee productivity and performances are examined. Topics include: job analysis, job descriptions, setting performance standards, designing appraisal feedback and administering performance appraisal systems.

The course explores a variety of approaches to evaluating employee performance. Both traditional and non-traditional methods will be examined. The course is aimed at providing you with practical, proven hands-on methods for evaluating performance. In addition, key research in the area will be explored with the intent of laying a strong foundation for quality evaluation systems. The course covers some of the important legal issues relevant to performance appraisal. Finally, The course also exposes the student to some arguments that have been made for doing away with performance evaluation altogether. Both the pros and cons of the issue will be examined.

**HRM 560. Cost Effective Human Resources Development — (3 Units)**

***Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 501 Ethics & Social Responsibility, HRM 503 Employment & Labor Law.***

This course will discuss strategic and financial considerations in training and development. It will address the design of training operations, program development, and ethicality and cost effectiveness of human resource programs. The relationship of cultural diversity and work-force forecasting to budgets and financial planning will be explored.

**HRM 570. Employee Rights, Responsibilities and Discipline — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law.*

Studies the moral and legal rights and responsibilities of employees in the context of discipline, reward and corporate restructuring. Topics include: Constitutional views, corporate disclosure, employee loyalty and dissent, employee participation, employee privacy, disciplinary due process and other current issues.

**HRM 580. Alternative Dispute Resolution (ADR) in the Workplace — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law.*

This course introduces you to general Alternative Dispute Resolution (ADR) processes including mediation, arbitration, and conflict avoidance. You will learn the value of internal and external ADR programs and how they affect the following areas: legal, economic, personnel, and image. The course will then cover a variety of work-place conflicts and how ADR is used to resolve them. Once a general understanding of these principles has been reached, the student will be asked to apply what has been learned to help understand and manage workplace conflict.

**HRM 598. Advanced Directed Individual Research — (3 Units)**

*Prerequisites: Students must have completed all the Human Resources Management core courses and all of their chosen Professional concentration courses.*

The purpose of this course is to teach the student how to apply research methods in their Master's Thesis. This includes selecting a research problem, developing a thesis proposal, as well as instruction on the completion of a thesis after the topic has been approved by the thesis advisor and the thesis committee. Various kinds and types of research will be studied. Systems for gathering and reporting data as well as statistical processing of data will be covered

Students will develop a **Final Project**, consisting of a **preliminary proposal** for Thesis Committee Approval and **development of the first three chapters** of the thesis.

**HRM 599. HRM Graduate Project or Thesis — (3 Units)**

*Prerequisite: HRM 598 Advanced Directed Individual Research.*

Supervised individual field project or research thesis involving the implementation of the research proposal produced by the student in fulfillment of Graduate Project and Thesis Design.

International Business

**IBUS 410. International Business Law — (3 Units)**

*Prerequisites: IBUS 301 The International Business Environment*

*Recommended: BLAW 201 Introduction to Business Law*

Covers important elements of and variation in laws governing the conduct of business in countries of particular importance to the U.S. Focuses on laws governing common overseas business activities, compliance issues they might present, and recent and anticipated developments.

**IBUS 430. Key Factors For Successful International Management — (3 Units)**

*Prerequisites: IBUS 301 The International Business Environment, MGT 301 Management Theory & Practice.*

This course covers the development and implementation of strategies for competing internationally. Topics include the rapid globalization of industries, different foreign competitive environments and business methods, new organizational forms such as strategic alliances, and networks.

Reviews US export controls; trade regulations and extraterritorial application of US laws governing international business transactions. Also examines the legal aspects of establishing an overseas operation; joint venturing abroad; using a foreign distributor; exporting technology; and the Export Administration Act, Foreign Corrupt Practices Act and relevant antitrust laws.

Presents issues and challenges for managing a multinational workforce. Discusses techniques and strategies for managing performance in multinational settings to insure effective and efficient performance. Topics include cross-cultural teams, leadership and international human resource management.

**IBUS 440. Fundamentals of International Marketing — (3 Units)**

***Prerequisites:* IBUS 301 *The International Business Environment*, MKT 301 *Introduction to Marketing*.**

Covers opportunities and problems in the development and marketing of products and services for overseas customers. Includes market research methods, product and service design considerations, and promotion and advertising techniques applicable and useful in the international setting; political, legal, economic, and cultural variables that determine foreign government policy, customer tastes and preferences, and constraints on resources available to overseas marketing.

**IBUS 460. Comparative Economic Systems & Theory — (3 Units)**

***Prerequisites:* IBUS 301 *The International Business Environment*, ECON 311 *Principles of Macroeconomics*.**

Covers the nature of and compares and contrasts the economic systems of the representative nations of the world. Although the primary focus is on U.S. major trading partners and leading competitors, the economic systems of Less Developed Countries (LDCs) will also be examined. This course will include relevant economic, political and philosophical theories; social and cultural variables; institutions and practices; international relations, competitiveness, cooperation; and current significant trends. In addition to covering the basic concepts, definitions, methods, theories and models, this course will also include case studies of selected economies. This will give the student the opportunity to analyze data regarding the performance of different variants within the compared economic systems.

**IBUS 493. Practicum in International Business — (2 Units)**

***Prerequisite:* IBUS 301 *The International Business Environment*.**

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**IBUS 494. Practicum in International Business — (3 Units)**

***Prerequisite:* IBUS 301 *The International Business Environment*.**

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**IBUS 498. Directed Individual Study in International Business — (2 Units)**

***Prerequisite:* IBUS 301 *The International Business Environment*.**

Course content arranged with faculty.

**IBUS 499. Directed Individual Study in International Business — (3 Units)**

*Prerequisite: IBUS 301 The International Business Environment.*

Course content arranged with faculty.

**IBUS 503. Graduate International Management — (3 Units)**

*Prerequisites: Graduate Standing.*

Includes the application of specialized or recently developed theory, concepts, and techniques to the resolution of important, complex, or current management issues facing the multinational or multicultural firm. Focuses on social, cultural, or political issues and management strategies to resolve them to maximize productivity, job satisfaction, and organizational effectiveness.

**IBUS 540. Advanced International Marketing — (3 Units)**

*Prerequisite: Graduate Standing.*

This course includes the identification and analysis of recent consumer trends and the application of specialized or recent techniques to address the development and marketing of products and services abroad. This course focuses on product development, marketing research, advertising, etc. in emerging and potential markets, such as the Pacific Rim, Eastern Europe, and the Americas.

**IBUS 593. Advanced Practicum in International Business — (2 Units)**

*Prerequisite: Graduate Standing.*

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**IBUS 594. Advanced Practicum in International Business — (3 Units)**

*Prerequisite: Graduate Standing.*

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**IBUS 598. Advanced Directed Individual Study in International Business — (2 Units)**

*Prerequisite: Graduate Standing.*

Course content arranged with faculty.

**IBUS 599. Advanced Directed Individual Study in International Business — (3 Units)**

*Prerequisite: Graduate Standing.*

Course content arranged with faculty.

Management

**MGT 420. Production and Operations Management — (3 Units)**

*Prerequisite: MSCI 301 Introduction to Management Science.*

Covers effective decision-making tools and techniques for production and operations. Includes decision theory, tools, techniques, and support systems; aggregate planning; system location, layout design and maintenance; statistical applications to quality control, with an emphasis on Total Quality Management inventory and statistical process control; materials requirement planning; and forecasting.

**MGT 421. Manufacturing Management Systems — (3 Units)**

*Prerequisites: MSCI 285 Introduction to Business Statistics, MSCI 301 Introduction to Management Science.*

Covers the development and implementation of systems for production design and planning, inventory and shop floor control, and other manufacturing related tasks. Includes the nature and applications of computer-aided design and manufacturing (CAD/CAM) programs. Assignments include the design of a prototype manufacturing management system.

**MGT 422. Project Management— (3 Units)**

*Prerequisites: The student is expected to have a basic understanding of management foundations, to be familiar with the case study method, and to have basic presentation skills.*

*Pre-requisite courses: MGT 301- Management Theory & Practice; MSCI 285-Introduction to Business Statistics; MSCI 301-Introduction to Management Science .*

A course dealing with planned project execution and management in organizations; covering the organization, staffing, planning, scheduling, controlling, budgeting, and evaluation of small, intermediate, and large projects. Course work includes various current techniques such as PERT, technologies such as project management software packages; and organizational structures such as matrix support. Project Management at the individual, team (group), and organizational level.

**MGT 440. E-Commerce Business Strategies — (3 Units)**

*Prerequisite: MGT 301 Management Theory & Practice*

The course focuses on understanding the internet as a source of marketing and as a source of sales in consumer and business markets. We will examine strategic challenges and opportunities for supplier management, customer relationship management, marketing communications and new business development. We will compare traditional channels of distribution and the internet as well as internet retailing versus brick and mortar retailing.

**MGT 460. Entrepreneurship — (3 Units)**

*Prerequisite: MGT 301 Management Theory & Practice.*

Students will identify and evaluate potential opportunities and develop a plan for implementation of a business concept. The process of business plan development emphasizes concept development, followed by research, assumption verification, and implementation. Students will write a business plan, which includes an executive summary, business description, market analysis, competitive analysis, description of management team, and the implementation of actionable items in marketing, finance, and operations.

**MGT 492. Strategic Planning & Management — (3 Units)**

*Prerequisite: This is the Capstone course for the Bachelor of Science in Business Administration (B.S.B.A.) and is the culmination of all business and management study for this degree. The prerequisite for this course is completion of all other required courses in your business program.*

As a “capstone” course, the material will encompass all previous efforts during your studies for maximizing competitiveness in the industrial and macroscopic environment. The focus of this course is on application of knowledge highlighting the importance of, key issues reflected in and effective methods for, corporate goal formulation, internal and external analysis, business and corporate level strategy, and supportive organizational structures, processes, and systems. This course will cover current business issues and developments as well as assist students in gaining new knowledge and understanding about the management of corporate operations. While we will spend some efforts in the review of the conceptual and practical aspects of business policies and policy decision making by utilizing all the concepts, theories, and tools that were presented in previous courses—the focus is a “practioner’s approach”. Students will analyze and recommend comprehensive and workable approaches to case studies and be responsible for developing solutions to improve existing business plans. The

necessity to view and grasp everything in terms of the whole organization is a skill that is difficult to learn, but is achievable through study and concentrated efforts to read and complete the requirements of this capstone course.

**MGT 493. Practicum in Management — (2 Units lab)**

***Prerequisite: MGT 301 Management Theory & Practice.***

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MGT 494. Practicum in Management — (3 Units lab)**

***Prerequisite: MGT 301 Management Theory & Practice.***

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MGT 498. Directed Individual Study in Management — (2 Units)**

***Prerequisite: MGT 301 Management Theory & Practice.***

Course content arranged with faculty.

**MGT 499. Directed Individual Study in Management — (3 Units)**

***Prerequisite: MGT 301 Management Theory & Practice.***

Course content arranged with faculty.

**MGT 501. Graduate Management Theory & Practice — (3 Units)**

***Prerequisite: Graduate Standing. The Microsoft PowerPoint version that accompanies MS Word 97 or 2000 is also required.***

Covers various management approaches, including recent, emerging, and anticipated developments. Focuses critical attention on relevant theory, research, and practice; facilitates the development of analytical and research skills to encourage further contributions to the field; and identifies important and current employee issues for application of existing and future management knowledge.

**MGT 504. Performance Evaluation, Control & Rewards — (3 Units)**

***Prerequisite: MGT 501 Graduate Management Theory & Practice.***

Focuses on the theoretical underpinnings, analysis, design, and implementation of performance appraisal, control, and reward methods, tools and systems. Directs critical attention to measurement, motivation, personality, goal setting and behavioral theory and concepts and applies them to the selection of performance criteria and incentives. Includes the design of performance appraisal instruments and control reward systems; and the management of the implementation process, for example, involving performance feedback and behavior modification of performance, control, and reward systems in an existing organization, deliverable as a term project and as a consult report to the client.

**MGT 507. Organizational Change & Development — (3 Units)**

***Prerequisite: MGT 501 Graduate Management Theory & Practice.***

Includes theory regarding change both as an emergent social process and as a suitable application of management planning. Focuses on the knowledge base for planned change presented by theory and research regarding individual motivation and social process; the social function of the change agent; political dynamics and other relevant social and organizational issues, structures, and processes.

**MGT 508. Research & Practice in Small Business Management — (3 Units)**

***Prerequisite: MGT 501 Graduate Management Theory & Practice.***

Focuses on managing in the numerically and economically dominant sector of U.S. industry occupied by small businesses. Includes the analysis of such unique problems as succession planning; the intrusion of family issues in the workplace; buying an existing business or franchise - each considering the special viewpoint of the entrepreneur.

**MGT 509. Ethical Theory & Management Practice — (3 Units)**

***Prerequisite: MGT 501 Graduate Management Theory & Practice.***

Traces the development of ethical theory from ancient philosophy to the present, and applies it to the evaluation of actual decisions by managers and to the resolution of issues they are likely to face. Through text and case material, demonstrates the ubiquity, justifies the identification, and enables the evaluation of ethical assumptions underlying and rationale for a wide range of management decisions, behaviors, policies, and practices.

**MGT 510. Leading Your Organization in the 21st Century — (3 Units)**

***Prerequisite: MGT 501 Graduate Management Theory and Practice.***

This course will examine the inter- and intra-personal dynamics as they affect the achievement of corporate goals. Topics include theories of leadership; concepts and applications, including motivation, group dynamics, communication and conflict processes, power, authority, organizational structures and design. Managing change and organizational development in domestic and international environments are also emphasized. Students are provided with a solid foundation for examining leadership in a systematic manner.

**MGT 511. The Management of Knowledge Workers — (3 Units)**

***Prerequisite: MGT 501 Graduate Management Theory & Practice.***

Recognizes the value, uniqueness, and management challenges presented by the professional employee, and methods for addressing them. Focuses on the problems of measuring and rewarding unstructured task performance, developing incentives that meet the special needs of professionals, nurturing innovation and creativity, and resolving the tension between control and autonomy.

**MGT 520. Graduate Production & Management Systems Analysis & Development — (3 Units)**

***Prerequisite: Graduate Standing.***

This course identifies key production problems, including planning, scheduling, layout, and control; applies the system approach to their resolution; and includes recent developments, such as decision analysis and large-scale modeling.

**MGT 522. Graduate Project Management — (3 Units)**

***Prerequisites: MGT 501 Graduate Management Theory and Practice***

The student is expected to have a basic understanding of management foundations, to be familiar with the case study method, and to have basic presentation skills.

This course deals with planned project execution and management in organizations; covering the organization, staffing, planning, scheduling, controlling, budgeting, and evaluation of small, intermediate, and large projects. Course work includes various current techniques such as PERT, technologies such as project management software packages; and organizational structures such as matrix support, project management at the individual, team (group), and organizational level.

**MGT 530. Individual & Social Behavior in Organizations — (3 Units)**

*Prerequisite: Graduate Standing*

*Students must have basic computer skills such as email and also word-processing skills. Students should have a basic understanding of navigation of the worldwide web and a good general knowledge of management principles from prior work experience.*

Directs analytical and critical attention to theory and practice with application to understanding and maximizing individual productivity and job satisfaction and group and organizational effectiveness. Focuses on basic, applied, and particularly recent theory and research in various social science disciplines, including psychology, sociology, social psychology and anthropology. Includes the nature, determinants, and consequences of work motivation; group and organizational processes, focusing on leadership, communication, politics and conflict; and various interventions, including job, group and organizational design; team-building, performance evaluation and reward systems, and organization development.

**MGT 592. Graduate Strategic Planning & Management — (3 Units)**

*Prerequisite: FIN 501 Graduate Financial Theory & Policy; MGT 501 Graduate Management Theory & Practice; MKT 501 Graduate Marketing. Students need access to Microsoft Office version 97 or 2000.*

Introduction to methods for maximizing competitiveness in the industrial and macroscopic environment. Focuses on the importance of, key issues reflected in and effective methods for, corporate goal formulation, internal and external analysis, business and corporate level strategy, and supportive organizational structures, processes, and systems. Includes case analyses. Assignments include analysis, evaluation, and if needed, modification or design of strategy for existing company, deliverable as a term project as well as consultant report to client.

**MGT 593. Advanced Practicum in Management — (2 Units)**

*Prerequisite: Graduate Standing.*

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MGT 594. Advanced Practicum in Management — (3 Units)**

*Prerequisite: Graduate Standing.*

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MGT 598. Advanced Directed Individual Study in Management — (2 Units)**

*Prerequisite: Graduate Standing.*

Course content arranged with faculty.

**MGT 599. Advanced Directed Individual Study in Management — (3 Units)**

*Prerequisite: Graduate Standing.*

Course content arranged with faculty.

Management Information Systems

**MIS 410. Decision Support & Expert Systems — (3 units)**

*Prerequisites: MIS 202 Principles of Management Information Systems, MIS 204 Application Development, Design, & Implementation.*

An examination of the manager's responsibilities for problem solving and decision making and of those areas in which computers can be used as tools to gain the insight needed to support selection of decision alternatives.

This course goes beyond traditional file and information manipulation programs to cover systems that follow reasoned, logical patterns based on criteria specified by an expert, including facts, rules, ad hoc procedures, and the manipulation of quantified uncertainty factors. Students will be provided with the software tools for implementing decision support and expert systems and encouraged to apply the software to solve problems.

**MIS 412. Information Center Concept & Management — (3 units)**

*Prerequisites: MIS 202 Principles of Management Information Systems, MIS 204 Application Development, Design, & Implementation.*

Consideration of function and role of the Information Center, a vehicle for organizational support of end-user computing. Management issues dealing with the level and mix of services provided and the placement of the Information Center within the organization. Discusses control and security matters.

**MIS 413. Local Area Networks Implementation & Management — (3 units)**

*Prerequisite: MIS 301 Business Data Communications.*

*You will participate in a laboratory once every other week. Lab exercises will provide hands-on experience with networking equipment described in the course. In lab assignments, you will measure and compare the performance of data network hardware as well as write application programs (i.e., clients and servers) that communicate over the Internet. For the experiments you must know college-level Calculus math.*

Principles and specific implementation of local area network systems, including predominant networking hardware and software products, local area networking methodologies, and communicating with peer dissimilar networks. Extensive use will be making of cases, qualifying students to participate in projects that will define, select and implement a LAN to satisfy specific applications requirements.

**MIS 415. Advanced Database Concepts — (3 units)**

*Prerequisite: MIS 301 Business Data Communications and entry-level computer literacy.*

Information is stored in databases and is considered essential for business success. This course will examine the tools and techniques used in the construction of databases that help overcome the complexities involved in storing vast amounts of data. This course also explores the methods used to store and retrieve data and the ways in which businesses utilize retrieved data. This is a hands-on course.

**MIS 416. Human-Computer Interface — (3 units)**

*Prerequisite: MIS 204 Application Development, Design, & Implementation.*

The goal of Human Computer Interface-HCI is to ensure that the systems produced by designers for people to use are comprehensible, consistent and usable. Its central concern is the good design of socio-technical systems. The discipline of HCI draws its inspiration and techniques from a broad range of subjects-psychology, ergonomics, cognitive science, computer science and software engineering.

This course will cover the study of technology for human-computer interface. It will emphasize the research-based principles and guidelines of effective user-interface design in information systems. Topics include user-system dialogues, graphical and natural language interfaces, user modeling, hypertext and hypermedia, and usability engineering.

**MIS 420. Information Systems Professionalism & Ethics — (3 units)**

*Prerequisite: MIS 202 Principles of Management Information Systems.*

Surveys the issues and responsibilities facing the information systems practitioner. Topics include computer waste and mistakes, computer crime, privacy, ergonomic issues in the work environment, professional training and licensing, and other ethical information systems issues.

**MIS 440. Internet Technology & E-Commerce — (3 units)**

***Prerequisite: MIS 301 Business Data Communications.***

This course focuses on the structure and function of the Internet and the information superhighway concept. Topics include TCP/IP Protocol Suite, Internet Information Services (e-mail, file transfer, Telnet), information resource discovery (World Wide Web and search engines), intra-networking within a corporation, network security and firewalls. Students will use these Net-centric technologies to design and implement e-commerce systems capable of interacting with marketing, production, accounting, and external electronic payment. Such Web systems enable customers to examine products and pricing options, place orders, track their progress, make payments, and check their account status directly over the Internet.

**MIS 493. Practicum in Management Information Systems — (2 units)**

***Prerequisite: MIS 202 Principles of Management Information Systems.***

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MIS 494. Practicum in Management Information Systems — (3 units)**

***Prerequisite: MIS 202 Principles of Management Information Systems.***

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MIS 498. Directed Individual Study in Management Information Systems — (2 units)**

***Prerequisite: MIS 202 Principles of Management Information Systems.***

Course content arranged with faculty.

**MIS 499. Directed Individual Study in Management Information Systems — (3 units)**

***Prerequisite: MIS 202 Principles of Management Information Systems.***

Course content arranged with faculty.

**MIS 502. Graduate Computers & Management Information Systems — (3 units)**

***Prerequisite: None. You should have completed prior, lower level course in Information Systems, or have the appropriate work experience. For each of the case studies that students will complete in this course, students are expected to prepare PowerPoint slides.***

An introduction to the study and practice of information systems management. The objective is to facilitate students' understanding of the structure, development, and management of information systems that can support a wide range of organizational functions at various levels with a view to develop a capability to analyze and/or to design an information system to satisfy business needs. Component parts of the information system are studied, together with the interactions between such components.

The discussion assumes logical reasoning to be the core of conceptualization. Thus, much of the material covered appears to be a re-statement of common sense logic, which in fact it is. You will frequently observe formalized statements of natural reasoning in the context of computer operations and information systems structure and application.

**MIS 504. Information Systems Analysis & Design — (3 units)**

***Prerequisite: MIS 502 Graduate Computers and Management Information Systems.***

This course will examine the techniques and procedures that are usually used to develop an information system for an organization. Therefore, it is essential to design the logical components of a system and from there design the physical system. In essence the systems analysts develop a total system (including but not limited to data,

procedures, software processes, and hardware specifications) from the ground up, carefully interacting with the people who will use or control the ultimate system. The course examines these activities in a hands-on manner.

**MIS 505. Database Systems: Design, Implementation, and Management — (3 units: 2 guided instruction/1 lab)**

***Prerequisite: MIS 504 Information Systems Analysis and Design or demonstration of mastery of material.***

Database concepts and design; the relational database model; basic concepts and components; database design; concepts and procedures. Practical guide to database design and implementation; implementing the database design concepts: a case. Advanced database topics; complex database environments; new developments, and managing the database. Older database models.

**MIS 520. Advanced Information Systems Analysis & Design I — (3 units: 2 guided instruction/1 lab)**

***Prerequisite: MIS 504 Information Systems Analysis & Design.***

***This course assumes the student understands basic principles of Systems Analysis and is proficient with office automation tools, such as Microsoft Word and Excel.***

***Students will be required to use the Microsoft Office for CASE assignments. Students will be required to have a Pentium type PC running Windows 95 or greater operating system.***

Analysis and logical design of Management Information Systems using computer-aided software engineering (CASE) tools. Topics include techniques for stating and analyzing information systems requirements, hardware/software selection and evaluation, system implementation and performance evaluation, and strategic information systems.

**MIS 530. Advanced Information Systems Analysis & Design II — (3 units: 2 guided instruction/1 lab)**

***Prerequisite: MIS 520 Advanced Information Systems Analysis & Design I***

***This course assumes the student understands basic principles of Systems Analysis and is proficient with office automation tools, such as Microsoft Word and Excel.***

***Students will be required to use Microsoft Office for CASE assignments. Students will be required to have a Pentium type PC running Windows 95 or greater operating system.***

This course continues the study of analysis and logical design of Management Information Systems using computer-aided software engineering (CASE) tools. Topics include techniques for stating and analyzing information systems requirements, hardware/software selection and evaluation, system implementation and performance evaluation, and strategic information systems.

**MIS 550. Management of Information Services Function — (3 units)**

***Prerequisite: MIS 502 Graduate Computers and Management Information Systems.***

***Students must have:***

**A personal computer with MS-Office installed.**

**Access to the Internet (World Wide Web).**

**An e-mail address.**

***A working knowledge of, and familiarity with, application software in general.***

This course introduces students to the Management aspect of Information Services. It challenges the problem-solving aspect of the individual as well as prepares future managers to be effective exploiters of information technology. Students will learn how to identify and evaluate potential problems, and recommend possible solutions.

**MIS 560. Behavioral & Economic Aspects of Information Systems — (3 units)**

***Prerequisite: MIS 502 Graduate Computers & Management Information Systems.***

Principles of organization theory and strategy as they relate to MIS. Topics include the role of information in organizations, the information center concept and information system strategic planning, data validation and

data completeness, comparison of centralized and decentralized systems, computer pricing policies and cost allocation, economies of scale, and security and legal considerations.

**MIS 570. Executive Decision Making & Design — (3 units)**

*Prerequisite: MIS 560 Behavioral & Economic Aspects of Information Systems.*

This course will examine the tools and techniques used in the construction and implementation of a Decision Support System (DSS). The term DSS is a catch all term, meaning that most or many forms of advanced information systems are classed under that umbrella term. This advanced course will examine a variety of Intelligent Systems. These systems are leading edge technology but the difficult part of implementing the system is not writing the software but rather preparing the organization for the system and implementing them. What really makes these systems so unique is that they are perceived as threatening the jobs of the decision-makers in organizations-and decision-makers are the ones who must decide to implement a system. A working knowledge of how these systems operate is therefore also required.

**MIS 593. Advanced Practicum in Management Information Systems — (2 units)**

*Prerequisite: Graduate Standing.*

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MIS 594. Advanced Practicum in Management Information Systems — (3 units)**

*Prerequisite: Graduate Standing.*

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MIS 598. Advanced Directed Individual Study in Management Information Systems — (2 units)**

*Prerequisite: Graduate Standing.*

Course content arranged with faculty.

**MIS 599. Advanced Directed Individual Study in Management Information Systems — (3 units)**

*Prerequisite: Graduate Standing.*

Course content arranged with faculty.

Management Science

**MSCI 532. Advanced Quality Control — (3 units)**

*Prerequisite: MGT 520 Advanced Production & Management System Analysis & Development.*

From a managerial perspective, covers a wide range of methods for assurance of control over product quality and production process. Focuses on staffing, organizing, training, and supervising to integrate total quality management at all levels of the organizational structure and stages of the production process.

**MSCI 580. Advanced Systems Modeling & Simulation — (3 units)**

*Prerequisite: MIS 502 Computers and Management Information Systems.*

Covers the techniques of developing and using simulation models as an experimental method in design, planning, and control of operational systems. Simulation models of operational systems are constructed on a computer, and used to evaluate alternative design configurations, decision rules and control techniques.

### **MSCI 585. Graduate Business Statistics — (3 units)**

#### ***Prerequisite: Graduate Standing.***

Emphasizes analyzing data, interpreting the output and utilizing skills to effectively apply statistical techniques to the design and evaluation of research regarding business practice. Included are the knowledge and skills to select statistical procedures appropriate to a research task and design, and the performance of accurate calculations in applying them. Covers concepts and techniques regarding problems, case studies, data analysis and the interpretation of computer output via Minitab and excel.

- A First Look at Statistics and Data Collection & Data Presentation Using Descriptive Graphs
- Data Summaries using Descriptive Measures & Probability Concepts
- Discrete Probability Distributions
- Continuous Probability Distributions
- Statistical Inference and Sampling
- Hypothesis Testing for the Mean and Variance of a Population
- Inference Procedures for Two Populations
- Analysis of Variance (ANOVA)
- Quality Improvement
- Applications of the Chi-Square Statistic
- Correlation and Simple Linear Regression
- Quantitative Business Forecasting
- Nonparametric Statistic
- Marketing

### **MKT 430. Marketing Management (3 units)**

#### ***Prerequisites: MGT 301 Management Theory & Practice, MKT 301 Introduction to Marketing.***

This course provides a comprehensive overview of the science of Marketing, with special emphasis placed upon the kind of information that Marketing Managers need in order to make strategic decisions. In addition to the "Four Ps" (Product, Price, Place, Promotion) being thoroughly covered, we also look at some of the latest trends in marketing, including e-Commerce and the internet, and the way this is changing the relationship between wholesalers and retailers as well as retailers and consumers.

### **MKT 440. Internet Marketing (3 units)**

#### ***Prerequisite: MKT 301 Introduction to Marketing.***

The impact of the Internet in current years has surprisingly forced companies and individuals to change their way of conducting business. While in recent years the opportunities in doing business on the Internet has increased dramatically, at the same time, in the last few months, we have seen that many of these companies have closed their doors due to lack of sales and funding. Executives need to assess how and why they fit in the marketplace and more importantly, where they want to be tomorrow and how the Internet will get them there. This course discusses the basic fundamentals of marketing and internet marketing, the impact of web design, and strategies and tactics to use when doing business through the Internet.

### **MKT 493. Practicum in Marketing (2 units lab)**

#### ***Prerequisite: MKT 301 Introduction to Marketing.***

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MKT 494. Practicum in Marketing (3 units lab).**

***Prerequisite: MKT 301 Introduction to Marketing.***

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MKT 498. Directed Individual Study in Marketing (2 units)**

***Prerequisite: MKT 301 Introduction to Marketing.***

Course content arranged with faculty.

**MKT 499. Directed Individual Study in Marketing (3 units)**

***Prerequisite: MKT 301 Introduction to Marketing.***

Course content arranged with faculty.

**MKT 501. Graduate Marketing (3 units)**

***Prerequisite: Graduate Standing.***

Covers issues in marketing policy, develops management knowledge and skills to address them, and identifies recent and anticipated environmental developments which relate to marketing.

**MKT 508. Advanced Promotional Planning (3 units)**

***Prerequisite: MKT 501 Graduate Marketing.***

This course covers advanced promotional planning. Marketing 508 centers around the manager's perspective of administration promotional planning. The focus of the course is the nature and purpose of promotional planning. The emphasis is the manager's perspective of the nature, purpose and various elements of the promotional programs. The course focuses on problem solving in task identification and allocation, and effective responses to environmental constraints and governmental regulations.

**MKT 510. Advanced Marketing Concepts & Functions (3 units)**

***Prerequisite: MKT 501 Graduate Marketing.***

Covers complex marketing issues, directs critical attention to recent or advanced techniques, and develops the knowledge and skill to appropriately select and effectively apply them. Focuses on such issues as brand switching, new product development and introduction, distribution and channel structure, and media selection.

**MKT 530. Advanced Marketing Management (3 units)**

***Prerequisites: MKT 501 Graduate Marketing, MGT 501 Advanced Management.***

This course introduces the student to marketing management by focusing on the various components of management, with emphasis on the functions of planning, organizing, directing, controlling, staffing, and budgeting. Examined are the major decision areas of marketing opportunity analysis, product strategy, distribution strategy, promotional strategy, pricing strategy, and social and ethical issues.

**MKT 535. Consumer Motivation & Behavior (3 units)**

***Prerequisite: MKT 501 Graduate Marketing.***

This course facilitates knowledge and skills to critically evaluate, apply, and contribute to theory, research and practice concerning consumer motivation and behavior. This course focuses on models that are recent, emerging, undergoing evaluation, controversial or concern current developments in consumer behavior.

**MKT 593. Advanced Practicum in Marketing (2 units)**

***Prerequisite: Graduate Standing.***

Course requirements may be satisfied with 60 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MKT 594. Advanced Practicum in Marketing (3 units)**

***Prerequisite: Graduate Standing.***

Course requirements may be satisfied with 90 hours of previous or concurrent practical experience, verified by a proctor (e.g., a corporate officer at the research site), and approved and monitored by faculty, by whom a term paper is to be assigned and graded for evaluation purposes.

**MKT 595. Advanced Marketing Strategy & Policy (3 units)**

***Prerequisite: MKT 501 Graduate Marketing.***

Focuses on today's dynamic environment for products and services; development and use of methods, procedures, structures, and systems to detect and analyze changes in it; and the formulation of objectives and planning of marketing strategies that reflect them as well as respond effectively to environmental changes.

**MKT 598. Advanced Directed Individual Study in Marketing (2 units)**

***Prerequisite: Graduate Standing.***

Course content arranged with faculty.

**MKT 599. Advanced Directed Individual Study in Marketing (3 units)**

***Prerequisite: Graduate Standing.***

Course content arranged with faculty.

**Master of Human Resources Management (MHRM) Degree Program**

CNU's Business Administration degree programs are modeled closely after the *American Assembly of Collegiate Schools of Business* accreditation standards (AACSB). CNU bachelor's and master's graduates in Business Administration are individuals equipped with the broadest range of capabilities to maximize U.S. competitiveness, effectively meeting the challenges of a changing international, economic, legal, political and technological environment.

**Master of Human Resources Management Program Objectives:**

The MHRM degree program examines human resources management, organizational behavior, ethics and management, and equal employment opportunity management. The MHRM program objective is to prepare the graduate for mid-level and senior-level HRM Generalist and Specialist positions in such settings as manufacturing, service, finance and retailing. The student completes core courses and then chooses from one of the Professional Focuses: Employee Relations, Human Resources Administration or Strategic Human Resources Planning. Laboratory coursework is completed through the design and execution of a relevant HR project implemented in the workplace.

**MHRM Program Learning Outcomes:**

- An ability to analyze, design, and implement management procedures connected with planning, organizing, staffing, directing and controlling in organizations.
- An ability to apply behavioral principles connected with self-awareness, perception, communication, motivation, productivity, group processes, organizational change, personal stress and leadership.

- An ability to design and develop procedures for recruiting, selection, training, development, evaluating performance, compensation, and union relations.
- An in-depth understanding and appreciation of the interrelationship between government, business, and society including issues of values, ethics and belief systems.
- An in-depth understanding and appreciation of current statutory and case law and administrative agency relations related to BEG, Affirmative Action, labor relations, occupational safety and health, compensation, Americans with Disabilities Act and other fair employment practices.
- An ability to apply behavioral diagnostic techniques and intervention strategies in organizational and system-wide change.
- An in-depth understanding and appreciation of interpersonal and organizational communications and their connection with the dynamics of human behavior.
- An in-depth understanding and appreciation of labor relations including the organizing process, collective bargaining, labor contract administration, union structure, and the influence of labor market factors.
- An in-depth understanding and appreciation of the moral and legal rights and responsibilities of employees including corporate disclosure, employee privacy, disciplinary due process, alternative dispute resolution, and other current and emerging issues.
- An ability to analyze, design and implement procedures and systems connected with Human Resource Management with a focus on Human Resource Administration, Strategic Human Resource Planning, or Employee Relations.
- An ability to communicate effectively.

By pursuing a Master of Human Resources Management Degree, the skills you have acquired in a specific field are recognized as pre-requisites for this advanced professional degree. Your prior knowledge and experience is enhanced by graduate studies which focus on your chosen profession.

The Master of Human Resources Management degree program requires the completion of a minimum of 36 units which consist of a mixture of guided instruction and guided instruction/lab formats. Laboratory coursework is completed through practical business experience. Students complete a Professional Core and then select a Professional Focus as a course of study.

Each course is completed in 15 weeks, requiring contact with faculty, or a mutually approved and arranged equivalent. Students must own or have access to a computer. Each course requires the completion of both developmental and evaluative assignments. Completion of the developmental assignment must demonstrate commitment to the acquisition of knowledge and skills within the course area, to the satisfaction of the faculty. Completion of the evaluative assignment must demonstrate mastery of all course material to the satisfaction of faculty, whose evaluation is expressed in the assignment of a final course grade. Specified in the outline for each course: Developmental and evaluative assignments, faculty contact, guided instruction, and laboratory and developmental components.

Students will take all the HRM core courses and choose one of the professional areas in which to specialize. **No more than 9 units can be taken at the 400 level.**

Upon completion of the HRM core and professional courses, students will then take the project/thesis courses.

## **MASTER OF HUMAN RESOURCES MANAGEMENT PROGRAM REQUIREMENTS**

A prospective student shall have obtained a Bachelor of Arts or Bachelor of Science degree with a 3.0 cumulative GPA for consideration of admission to this program.

The Master of Human Resources Management requires the completion of a minimum of 36 units which consist of a mixture of guided instruction and guided instruction/lab formats. Laboratory coursework is completed through practical business experience. Students complete a Professional Core and then select a Professional Focus as a course of study.

Lab work is assigned on an individual basis and is determined by faculty assessment.

The Master of Human Resources Management requires successful completion of a total of 36 units with a cumulative GPA of 3.0 beyond those applied to the fulfillment of undergraduate degree requirements. This program consists of three parts:

Human Resources Management	
Professional Core	15 units
Professional Focus	15 units
Professional Project/Theses	6 units
<b>Total</b>	<b>36 units</b>

Students will take all the HRM core courses and choose one of the professional areas in which to specialize. Upon completion of the HRM core and professional courses, students will then take the project/thesis courses

### **Master of Human Resources Management Course Listings**

#### **HRM Professional Core (15 Units)**

##### **HRM 430. The Managerial Process — (3 Units)**

*Prerequisites: Completion of all required lower-division and upper-division Business Administration core courses.*

Studies the theories of management as applied to decision-making in planning, organizing, staffing, directing, and controlling an organization.

##### **HRM 440. Organizational Behavior — (3 Units)**

*Prerequisite: HRM 430 The Managerial Process.*

Applies the behavioral sciences to topics such as: self-awareness, perception, communication, motivation, productivity, group processes, change in organizations, personal stress, and leadership processes.

##### **HRM 450. Human Resources Management Processes — (3 Units)**

*Prerequisite: HRM 430 The Managerial Process.*

Studies human resources within the organization including recruiting, selection, training, development, evaluating performance, compensation, and union relations, all within relevant legal constraints.

##### **HRM 501. Ethics & Social Responsibility — (3 Units)**

*Prerequisite: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes.*

The interrelationship between government, business, and society are examined with the view that managers must constantly adapt to the realities of the economic, political, and social environment of business.

Management must consider its social responsibility in resolving issues that include values, ethics, and beliefs underlying its decisions. Strategic management for competitiveness, within the business and society context, ethical decision making, corporate culture, and moral reasoning are also examined. Global competitiveness and multi-national business-government relations are discussed.

**HRM 503. Employment & Labor Law — (3 Units)**

*Prerequisite: HRM 450 Human Resources Management Processes.*

Analyzes the application of current statutory and case law and administrative agency regulations related to EEO, Affirmative Action, labor relations, occupational safety and health, compensation issues, Americans with Disabilities Act, and other fair employment practices.

**PROFESSIONAL FOCUS Select (15 Units)**

**Employee Relations** (*Choose any five courses*)

**HRM 502. Organizational Leadership — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes.*

Application of behavioral science knowledge to organizational problems through programs of planned change. Focuses on the diagnostic techniques and intervention strategies used in managing system wide organizational change.

**HRM 506. Organizational Communication — (3 Units)**

*Prerequisite: HRM 430 The Managerial Process.*

Communication theory and research are examined as they relate to interpersonal communication and behavior in organizations. Analyzes oral and written communication theories and focuses on internal publications particularly related to human resources.

**HRM 530. Labor Relations: Process & Law — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law*

A study of the practice of labor relations including the organizing process, collective bargaining, labor contract administration, union structure and issues, and the influence of external labor market factors on labor relations

**HRM 560. Cost Effective Human Resources Development — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 501 Ethics & Social Responsibility, HRM 503 Employment & Labor Law.*

This course will discuss strategic and financial considerations in training and development. It will address the design of training operations, program development, and ethicality and cost effectiveness of human resource programs. The relationship of cultural diversity and work-force forecasting to budgets and financial planning will be explored.

**HRM 570. Employee Rights, Responsibilities and Discipline — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law.*

Studies the moral and legal rights and responsibilities of employees in the context of discipline, reward and corporate restructuring. Topics include: Constitutional views, corporate disclosure, employee loyalty and dissent, employee participation, employee privacy, disciplinary due process and other current issues.

**HRM 580. Alternative Dispute Resolution (ADR) in the Workplace — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law.*

This course introduces you to general Alternative Dispute Resolution (ADR) processes including mediation, arbitration, and conflict avoidance. You will learn the value of internal and external ADR programs and how they affect the following areas: legal, economic, personnel, and image. The course will then cover a variety of work-place conflicts and how ADR is used to resolve them. Once a general understanding of these principles has been reached, the student will be asked to apply what has been learned to help understand and manage workplace conflict.

**Human Resources Administration** (*Choose any five courses*)

**HRM 506. Organizational Communication — (3 Units)**

*Prerequisite: HRM 430 The Managerial Process.*

Communication theory and research are examined as they relate to interpersonal communication and behavior in organizations. Analyzes oral and written communication theories and focuses on internal publications particularly related to human resources.

**HRM 510. International Human Resources Management — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law.*

This course examines global issues in managing human resources, including cultural, legal, and local market pressures on HRM functions, and compares domestic operations with the complexities of managing an international workforce. This course will examine international human resources management, particularly firm-level human resources strategies in the international competitive environment. The relationships between the external environment, organizational factors, and international human resources management strategies and practices will be studied from both theoretical and practical perspectives. The subject will include topics such as strategic issues for international human resources management, human resources management in a variety of international organizational forms, cross-cultural issues, and expatriate management.

**HRM 520. Human Resources Information Systems — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law*

Studies the development and application of information systems to the management of human resources. Includes systems for payroll, skills inventories, succession planning, labor contract negotiations and administration, and other systems.

**HRM 540. Compensation Design & Administration — (3 Units)**

*Prerequisites: HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law*

This course focuses on the effective management of employee compensation and benefits in contemporary organizations. The course includes emerging issues in compensation. Compensation is studied from the organization's perspective rather than from the view of the individual employee or society. The content of the course applies to organizations large and small, public and private. Terminology may be adapted but the theories/processes of good compensation decision-making remain stable across various types of organizations. The goals of compensation administration are to design pay systems that elicit desired employee behaviors at work; to motivate employees to join, stay and perform at high levels; and for the organization to remain ethical and legal in its compensation programs. This course provides an overview of how an organization is to accomplish these purposes.

### **HRM 550. Performance Appraisal Systems — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 501 Ethics & Social Responsibility, HRM 503 Employment & Labor Law.*

Various systems used to evaluate employee productivity and performances are examined. Topics include: job analysis, job descriptions, setting performance standards, designing appraisal feedback and administering performance appraisal systems.

The course explores a variety of approaches to evaluating employee performance. Both traditional and non-traditional methods will be examined. The course is aimed at providing you with practical, proven hands-on methods for evaluating performance. In addition, key research in the area will be explored with the intent of laying a strong foundation for quality evaluation systems. The course covers some of the important legal issues relevant to performance appraisal. Finally, The course also exposes the student to some arguments that have been made for doing away with performance evaluation altogether. Both the pros and cons of the issue will be examined.

### **HRM 560. Cost Effective Human Resources Development — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 501 Ethics & Social Responsibility, HRM 503 Employment & Labor Law.*

This course will discuss strategic and financial considerations in training and development. It will address the design of training operations, program development, and ethicality and cost effectiveness of human resource programs. The relationship of cultural diversity and work-force forecasting to budgets and financial planning will be explored.

### **Strategic Human Resources Planning**

#### **HRM 502. Organizational Leadership — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes.*

Application of behavioral science knowledge to organizational problems through programs of planned change. Focuses on the diagnostic techniques and intervention strategies used in managing system wide organizational change.

#### **HRM 506. Organizational Communication — (3 Units)**

*Prerequisite: HRM 430 The Managerial Process.*

Communication theory and research are examined as they relate to interpersonal communication and behavior in organizations. Analyzes oral and written communication theories and focuses on internal publications particularly related to human resources.

#### **HRM 507. Organizational Development and Intervention — (3 Units)**

*Prerequisites: HRM 440 Organizational Behavior, HRM 450 Human Resources Management Processes.*

Focuses on the processes by which behavioral science knowledge and practices are used to help organizations achieve greater effectiveness; including improved quality of life, increased productivity, and improved product and service quality through strategic planning and interventions.

#### **HRM 508. Strategic Human Resources Planning — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 501 Ethics & Social Responsibility, HRM 503 Employment & Labor Law.*

Planning for effective utilization of human resources in organizations is explored. Topics include: human resources strategic planning, human resources information systems, employee protection, affirmative action, management succession and development planning and human resources-needs forecasting.

**HRM 510. International Human Resources Management — (3 Units)**

*Prerequisites: HRM 430 The Managerial Process, HRM 450 Human Resources Management Processes, HRM 503 Employment & Labor Law.*

This course examines global issues in managing human resources, including cultural, legal, and local market pressures on HRM functions, and compares domestic operations with the complexities of managing an international workforce. This course will examine international human resources management, particularly firm-level human resources strategies in the international competitive environment. The relationships between the external environment, organizational factors, and international human resources management strategies and practices will be studied from both theoretical and practical perspectives. The subject will include topics such as strategic issues for international human resources management, human resources management in a variety of international organizational forms, cross-cultural issues, and expatriate management.

**Professional Project/Thesis (6 Units)**

**HRM 598. Advanced Directed Individual Research — (3 Units)**

*Prerequisites: Students must have completed all the Human Resources Management core courses and all of their chosen Professional concentration courses.*

The purpose of this course is to teach the student how to apply research methods in their Master's Thesis. This includes selecting a research problem, developing a thesis proposal, as well as instruction on the completion of a thesis after the topic has been approved by the thesis advisor and the thesis committee. Various kinds and types of research will be studied. Systems for gathering and reporting data as well as statistical processing of data will be covered

Students will develop a **Final Project**, consisting of a **preliminary proposal** for Thesis Committee Approval and **development of the first three chapters** of the thesis.

**HRM 599. HRM Graduate Project or Thesis — (3 Units)**

*Prerequisite: HRM 598 Advanced Directed Individual Research.*

Supervised individual field project or research thesis involving the implementation of the research proposal produced by the student in fulfillment of Graduate Project and Thesis Design

## Contact CNU

CNU Website	<a href="http://www.cnuas.edu">www.cnuas.edu</a>
Toll Free	800-782-2422
Telephone	818-830-2411
Fax	818-830-2418
CNU Admissions	<a href="mailto:cnuadms@mail.cnuas.edu">cnuadms@mail.cnuas.edu</a>
CNU Administration	<a href="mailto:cnuadmin@mail.cnuas.edu">cnuadmin@mail.cnuas.edu</a>
Carlton Bryant President	<a href="mailto:cbryant@mail.cnuas.edu">cbryant@mail.cnuas.edu</a>
Stephanie M. Smith Vice President of Student Affairs/Registrar	<a href="mailto:smsmith@mail.cnuas.edu">smsmith@mail.cnuas.edu</a>
Cynthia Speed M.A.Ed Admissions	<a href="mailto:cspeed@mail.cnuas.edu">cspeed@mail.cnuas.edu</a>
Carol Backer Director of Instruction	<a href="mailto:cbacker@mail.cnuas.edu">cbacker@mail.cnuas.edu</a>
Jeanine Swartz Student Services	<a href="mailto:jswartz@mail.cnuas.edu">jswartz@mail.cnuas.edu</a>

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# **Appendix**

## **Application and Registration Forms**



**APPLICANT BACKGROUND INVENTORY**

**EDUCATION**  
**HIGH SCHOOL:**

Name	City/State	Year Graduated
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**COLLEGE:** Order original transcripts if you have not already done so (form included).

**FOR OFFICE USE ONLY:**  
 Transcripts  
 ↓

SEM. HR.	QTR. HR.	Name	Years Attended	Major	Degree	Credits	
<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>						<input type="checkbox"/>

**ADMISSIONS ESSAY**

Please demonstrate your writing skills and present a thoughtful summary of your reasons for entering a distance learning program. What skills and experience do you have to bring to this program? How do you feel it will benefit you and your career advancement?

**Submit your Admissions Essay via e-mail to your Admissions Representative.**

If you have questions, please feel free to contact CNU Admissions Representative Cynthia Speed (csped@mail.cnuas.edu).

Or, call Monday-Friday 8am-5pm PST at 800-782-2422 or 818-830-2411. Fax: 818-830-2418.

**ADMISSIONS CHECKLIST**

\* Indicates Required

- \*  Completed Application
- \*  Application Fee
- \*  Admissions Essay
- \*  Resume

**Institutional**

- \*  Transcripts (all postsecondary schools attended)
- \*  Tuition Assistance Forms (if applicable)
- Diplomas
- Test Scores (CLEP, PEP, DANTES, SAT, ACT, GRE, etc.)

**Experiential**

- Professional Licenses/Certifications
- Certificates of Completion
- Patents/Projects
- Honors/Awards

**Other**

- Workplace Supervisor's Evaluation
- Letters of Recommendation
- Articles/Publicity

**STUDENT'S RIGHT TO CANCEL AND REFUND POLICY**

The Course Start Date is defined on the front page of this Enrollment Agreement. California National University for Advanced Studies (CNU) guarantees that students will have access to their course study guides, via e-mail, US mail, or Internet by the selected Start Date of the Trimester. In a given trimester, a student is expected to combine guided and self-instruction and progress through the course according to the prescribed schedule. The student has the Right to Cancel by notifying the CNU Registrar in writing within five (5) days of enrolling and will receive a full refund of course fees paid to CNU. If a student cancels in writing after five (5) days of enrolling but before the Start Date, the student will receive a full refund minus a Non-Refundable Registration Fee of 20%, (not to exceed \$200 per degree program). Students requesting cancellation during subsequent weeks from their Start Date receive their refund according to the Refund Policy and formula for the refundable tuition amount, as defined in the table below.

**CNU shall make all refunds within 30 days of cancellation.**

EXAMPLE: If the student completes only 3 weeks of a 15-week course and paid \$900.00 in tuition, the refund is calculated as follows: Non-Refundable Registration Fee (20% X \$900 = \$900.00 - \$180.00 = \$720.00). Refundable tuition at 3 weeks of instruction completed (\$720.00 X 60% = \$432.00).

Student paid: \$900.00  
 School retains: \$468.00  
 School refunds: \$432.00

15-Week Course	Refundable Tuition Due After:
1-16 Weeks	1 <sup>st</sup> week = 80%
	2 <sup>nd</sup> week = 70%
	3 <sup>rd</sup> week = 60%
	4 <sup>th</sup> week = 50%
	5 <sup>th</sup> week = 40%
	6 <sup>th</sup> week = 30%
	7 <sup>th</sup> week = 20%
	8 <sup>th</sup> week = 10%
	9 <sup>th</sup> – 15 <sup>th</sup> week = 0%

**ALL NOTICES OF WITHDRAWAL OR REQUESTS FOR REFUNDS MUST BE SUBMITTED IN WRITING, ATTENTION TO:**

**STEPHANIE SMITH/REGISTRAR**  
 California National University for Advanced Studies  
 8550 Balboa Boulevard, Suite 210  
 Northridge, CA 91325

**CNU shall make all refunds within 30 days of cancellation.**

**I have read and understood the Cancellation and Refund Policy for California National University.**

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

## DEGREE PROGRAM TUITION

U.S./ CANADIAN  
RESIDENTS/INTERNATIONAL

COLLEGE:	DEGREE PROGRAM:	
QUALITY AND ENGINEERING MANAGEMENT	Bachelor of Quality Assurance Science	\$300 PER UNIT
	Master of Engineering Management	\$330 PER UNIT
ENGINEERING	Bachelor of Science in Engineering	\$300 PER UNIT
	Bachelor of Computer Science	\$300 PER UNIT
	Master of Science in Engineering	\$330 PER UNIT
BUSINESS ADMINISTRATION	Bachelor of Science in Business Administration	\$300 PER UNIT
	Master of Business Administration	\$330 PER UNIT
	Master of Human Resources Management	\$330 PER UNIT

## APPLICATION FEE PAYMENT

**APPLICATIONS SUBMITTED WITHOUT THE NONREFUNDABLE APPLICATION FEE, SIGNATURE, AND DATE WILL NOT BE PROCESSED.**

\$75 U.S. / Canadian Residents /International

**Form of Payment:**

Check enclosed

Please charge the application fee to the following credit card listed below:

Visa

Master Card

American Express

**PRINT NAME exactly as it appears on the credit card:** \_\_\_\_\_

**Credit Card Number:** \_\_\_\_\_ **Expiration Date:** \_\_\_\_\_

Do you have Employer Tuition Reimbursement?

YES  
 NO

**I certify that to the best of my knowledge, the information furnished in this application is true. I understand that it is for evaluation purposes only, and any credit awarded to me on that basis may be revoked if this information is found to be false.**

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**EXTENSION PROGRAM APPLICATION**

**This document is for extension students only.** If you are interested in completing a Bachelor's or Master's degree, you must complete the Degree Program Application. (When accepted to a degree program, credit will be given for those CNU extension courses completed that are applicable.) If you are interested in completing a certificate program in Human Resources Management, you must complete the Certificate Program Application. Be sure to read and complete this document thoroughly. Upon receipt of your application, we will send you an Extension Enrollment Agreement. For CNU's most up-to-date course listings, visit our website at [www.cnuas.edu](http://www.cnuas.edu)

**STUDENT INFORMATION**

**NAME:**             Female  
                           Male

Last/Family	First/Given	Middle Initial
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**HOME ADDRESS:**

Number/Route/P.O. Box	Street
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City/State	Zip/Postal Code	Country
------------	-----------------	---------

**EMPLOYER:**

Company/Organization	Title
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**WORK ADDRESS:**

Number/Route/P.O. Box	Street
-----------------------	--------

City/State	Zip/Postal Code	Country
------------	-----------------	---------

**TELEPHONES:**

Area Code/Home	Area Code/Work	FAX
----------------	----------------	-----

E-Mail Address
----------------

**PERSONAL:**

DOB: Month/Day/Year	Social Security #	Citizenship
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**MILITARY:**

(check all that apply)

Active                       Veteran                       Civilian Employee

**ETHNIC SURVEY:** (check one)  
 OPTIONAL

Native American     Asian/Asian American     Black/African American     Other  
 Hispanic                       Pacific Islander                       White/Caucasian

**REGISTRATION**

List below the courses you wish to take. Courses are designed to be completed in 15-week trimesters. You may take up to two courses per trimester. When a prerequisite is indicated, you must either (a) take that course; (b) submit documentation of having met that requirement academically or experientially; or (c) have it waived upon faculty approval.

	UNITS	COURSE NUMBER	COURSE TITLE
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1. \_\_\_\_\_

2. \_\_\_\_\_



**STUDENT'S RIGHT TO CANCEL AND REFUND POLICY**

**STUDENT'S RIGHT TO CANCEL AND REFUND POLICY**

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CNU shall make all refunds within 30 days of cancellation.

EXAMPLE: If the student completes only 3 weeks of a 15-week course and paid \$900.00 in tuition, the refund is calculated as follows: Non-Refundable Registration Fee (20% X \$900 = \$900.00 - \$180.00 = \$720.00). Refundable tuition at 3 weeks of instruction completed (\$720.00 X 60% = \$432.00).

Student paid: \$900.00  
 School retains: \$468.00  
 School refunds: \$432.00

15-Week Course	Refundable Tuition Due After:
1-15 Weeks	1 <sup>st</sup> week = 80%
	2 <sup>nd</sup> week = 70%
	3 <sup>rd</sup> week = 60%
	4 <sup>th</sup> week = 50%
	5 <sup>th</sup> week = 40%
	6 <sup>th</sup> week = 30%
	7 <sup>th</sup> week = 20%
	8 <sup>th</sup> week = 10%
	9 <sup>th</sup> – 15 <sup>th</sup> week = 0%

**ALL NOTICES OF WITHDRAWAL OR REQUESTS FOR REFUNDS MUST BE SUBMITTED IN WRITING, ATTENTION TO:**

**STEPHANIE SMITH/REGISTRAR**  
**California National University**  
**8550 Balboa Boulevard, Suite 210**  
**Northridge, CA 91325**

CNU shall make all refunds within 30 days of cancellation.

I have read and understood the Cancellation and Refund Policy for California National University.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_



**This document is for Certificate Program in Human Resources Management students only.**

If you are interested in completing a Bachelor's or Master's degree, you must complete the Degree Program Application. If you are interested in taking extension courses, you must complete the Extension Program Application. Be sure to read and complete this registration document thoroughly. Upon receipt of your registration, we will send you a Certificate Program enrollment agreement. For CNU's most up-to-date course listings, visit our website at [www.cnuas.edu](http://www.cnuas.edu)

**STUDENT INFORMATION**

**NAME:**     Female  
               Male

_____ Last/Family	_____ First/Given	_____ Middle Initial
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**HOME ADDRESS:**

_____ Number/Route/P.O. Box	_____ Street
--------------------------------	-----------------

_____ City/State	_____ Zip/Postal Code	_____ Country
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**EMPLOYER:**

_____ Company/Organization	_____ Title
-------------------------------	----------------

**WORK ADDRESS:**

_____ Number/Route/P.O. Box	_____ Street
--------------------------------	-----------------

_____ City/State	_____ Zip/Postal Code	_____ Country
---------------------	--------------------------	------------------

**TELEPHONES:**

_____ Area Code/Home	_____ Area Code/Work	_____ FAX
-------------------------	-------------------------	--------------

\_\_\_\_\_  
E-Mail Address

**PERSONAL:**

_____ DOB: Month/Day/Year	_____ Social Security #	_____ Citizenship
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**MILITARY:**

(check all that apply)

Active                       Veteran                       Civilian Employee

**ETHNIC SURVEY:** (check one)  
*OPTIONAL*

Native American     Asian/Asian American     Black/African American     Other  
 Hispanic               Pacific Islander               White/Caucasian

**TRACK    Check One:**

**PRACTITIONER TRACK**

The Practitioner Track is intended for candidates who do not currently hold a Bachelor's degree. Credits taken toward the Certificate Program may be credited toward a Bachelor's degree at a later time.\*

**PROFESSIONAL TRACK**

The Professional Track is intended for candidates who currently hold a Bachelor's degree. Credits toward the Certificate Program which are taken at the 500 level may be credited toward a Master's degree at a later time.\*

*\*CNU may limit the period of credit applicability to seven years, and/or at the discretion of the Admissions Committee.*

**STUDENT'S RIGHT TO CANCEL AND REFUND POLICY**

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 School retains: \$468.00  
 School refunds: \$432.00

15-Week Course	Refundable Tuition Due After:
1-15 Weeks	1 <sup>st</sup> week = 80% 2 <sup>nd</sup> week = 70% 3 <sup>rd</sup> week = 60% 4 <sup>th</sup> week = 50% 5 <sup>th</sup> week = 40% 6 <sup>th</sup> week = 30% 7 <sup>th</sup> week = 20% 8 <sup>th</sup> week = 10% 9 <sup>th</sup> – 15 <sup>th</sup> week = 0%

**ALL NOTICES OF WITHDRAWAL OR REQUESTS FOR REFUNDS MUST BE SUBMITTED IN WRITING, ATTENTION TO:**

**STEPHANIE SMITH/REGISTRAR**  
 California National University for Advanced Studies  
 8550 Balboa Boulevard, Suite 210  
 Northridge, CA 91325

CNU shall make all refunds within 30 days of cancellation.

I have read and understood the Cancellation and Refund Policy for California National University.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_



For help, refer to the CNU online catalog at our website: [www.cnuas.edu](http://www.cnuas.edu).

Or, call the CNU Admissions Office at 800-782-2422.

**CERTIFICATE PROGRAM FEES**

- REGISTRATION FEE                                 \$75 (NON-REFUNDABLE)
- PER COURSE FEE                                     \$900 (PLUS TEXTBOOKS AND SHIPPING)
- CERTIFICATE COMPLETION FEE     \$150  
(THIS FEE IS ASSESSED ONCE THE STUDENT APPLIES FOR CANDIDACY)

NOTE: THE PAYMENT PLAN OPTION IS NOT AVAILABLE FOR CERTIFICATE PROGRAM STUDENTS. TUITION MUST BE PAID IN FULL UPON ENROLLMENT.

**REGISTRATION FORMS SUBMITTED WITHOUT THE NON-REFUNDABLE REGISTRATION FEE, SIGNATURE, AND DATE WILL NOT BE PROCESSED.**

SEND THIS APPLICATION FORM AND PAYMENT TO:

**CALIFORNIA NATIONAL UNIVERSITY FOR ADVANCED STUDIES  
8550 BALBOA BLVD., SUITE 210  
NORTHRIDGE, CA 91325**

**Form of Payment:**

Check enclosed

Please charge the \$75.00 non-refundable application fee to the following credit card listed below:

Visa                                                          Master Card                                                          American Express

**PRINT NAME exactly as it appears on the credit card:** \_\_\_\_\_

**Credit Card Number:** \_\_\_\_\_ **Expiration Date:** \_\_\_\_\_

**I certify that to the best of my knowledge, the information furnished in this registration is true. I understand that it is for evaluation purposes only, and any credit awarded to me on that basis may be revoked if this information is found to be false.**

**Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_



**Human Resources Certificate Program  
ENROLLMENT AGREEMENT  
California National University for Advanced Studies  
8550 Balboa Boulevard, Northridge, CA 91325  
(818) 830-2411 Fax (818) 830-2418**

**STUDENT INFORMATION**

Be sure to read this thoroughly, as it represents your consent to enroll as a **Certificate Program** student and abide by the policies outlined herein.

**Name :**

\_\_\_\_\_

*Last* *First* *Middle*

**Address :**

\_\_\_\_\_

*Street* *City/State* *Zip/Postal Code*

**TUITION**

This acknowledges my registration at *California National University* for Advanced Studies in the Human Resources Certificate Program. As a Certificate Program student I have the opportunity to take one or more courses, and then later to apply formally for admission to my selected degree program. If accepted to a degree program, I will be given credit for those CNU course/s that I have completed which are applicable.

The tuition and fees below, which are based on a 15-week trimester system, cover one trimester of educational services. Most Instructional Materials are available for purchase through the CNU Bookstore at the CNU website as described in the enclosed *Instructional Materials Memorandum*. Therefore, it should be understood that the amount of this contract does not represent the total cost of the degree program. Students are required to sign a course enrollment agreement for each course taken. This enrollment agreement only represents the total amount of courses enrolled in for this 15-week trimester period and their related fees. NOTE: Overdue payments are charged a late fee of 1.5% per month of the outstanding balance.

**DESCRIPTION OF CHARGES**

<b>Units X \$300.00</b>	<b>\$</b>
<hr/>	
<i>TUITION</i>	
<b>Instructional Materials are purchased independently by Student</b>	<b>\$</b>
<i>INSTRUCTIONAL MATERIALS (Refer to enclosed Instructional Materials Memo)</i>	
<b>Shipping/Handling</b>	<b>\$</b>
<i>(Shipping Varies By Geographical Location)</i>	
<b>TOTAL AMOUNT FOR THIS CONTRACT PERIOD:</b>	<b>\$</b>

**THE TOTAL AMOUNT FOR ALL FEES, CHARGES, AND SERVICES THE STUDENT IS OBLIGATED TO PAY FOR THE COURSE OF SERVICE FROM:**

PLEASE CHECK THE BOX FOR YOUR START DATE. IF NO BOX IS CHECKED, THE FIRST DATE WILL BE SCHEDULED.		<b>Start Date</b>		<b>Completion Date</b>
1. <input type="checkbox"/>		_____		_____
2. <input type="checkbox"/>		_____		_____

**Any questions or problems concerning this school which have not been satisfactorily answered or resolved by the school should be directed to the Bureau for Private Postsecondary Education at 2535 Capitol Oaks Drive, Suite 400, Sacramento, CA 95789-0818. Phone: (916) 431-6959.**

This agreement is a legally binding instrument when signed by the student and accepted by *California National University* for Advanced Studies. Your signature on this agreement acknowledges that you have been given reasonable time to read and understand it and (A) a written statement of the refund policy including examples of how it applies and (B) you have reviewed the university website catalog that includes (1) a description of the course or educational service (2) a statement of all material facts concerning *California National University* for Advanced Studies and (3) the program or course of instruction.

**MY SIGNATURE BELOW CERTIFIES THAT I HAVE READ, UNDERSTOOD, AND AGREED TO MY RIGHTS AND RESPONSIBILITIES (AS OUTLINED IN THIS AGREEMENT) AND THAT THE INSTITUTION'S CANCELLATION AND REFUND POLICIES (DETAILED IN THIS AGREEMENT) HAVE BEEN CLEARLY EXPLAINED TO ME.**

\_\_\_\_\_  
 STUDENT SIGNATURE

\_\_\_\_\_  
 DATE

I CERTIFY THAT CALIFORNIA NATIONAL UNIVERSITY FOR ADVANCED STUDIES HAS MET THE DISCLOSURE REQUIREMENTS OF EDUCATION CODE §94810 OF THE PRIVATE POSTSECONDARY AND VOCATION REFORM ACT OF 1998.

\_\_\_\_\_  
 SIGNATURE OF UNIVERSITY OFFICIAL

\_\_\_\_\_  
 DATE

**THIS CONTRACT IS NO LONGER VALID IF IT HAS NOT BEEN SIGNED & RETURNED TO THE UNIVERSITY WITHIN 30 DAYS FROM THE DATE SIGNED BY THE UNIVERSITY OFFICIAL.**

**\*THIS CONTRACT BECOMES NULL AND VOID AFTER ONE YEAR FROM STUDENT SIGNATURE ON THE AGREEMENT.**

**STUDENT'S RIGHT TO CANCEL AND REFUND POLICY**

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15-Week Course	Refundable Tuition Due After:
1-16 Weeks	1 <sup>st</sup> week = 80% 2 <sup>nd</sup> week = 70% 3 <sup>rd</sup> week = 60% 4 <sup>th</sup> week = 50% 5 <sup>th</sup> week = 40% 6 <sup>th</sup> week = 30% 7 <sup>th</sup> week = 20% 8 <sup>th</sup> week = 10% 9 <sup>th</sup> – 15 <sup>th</sup> week = 0%

ALL NOTICES OF WITHDRAWAL OR REQUESTS FOR REFUNDS MUST BE SUBMITTED IN WRITING, ATTENTION TO:

Stephanie Smith/Registrar's Office  
California National University for Advanced Studies  
8550 Balboa Boulevard, Suite 210  
Northridge, CA 91325

The Student Tuition Recovery Fund (STRF) was established by the Legislature to protect any California resident who attends a private postsecondary institution from losing money if they prepaid tuition and suffered a financial loss as a result of the school closing, failing to live up to its enrollment agreement, or refusing to pay a court judgment. **The STRF Assessment has been paid by California National University for Advanced Studies on the student's behalf. PLEASE NOTE: If the student is not a resident of California, the student is not eligible for protection under, and recovery from, the Student Tuition Recovery Fund.**

**TYPE OF PAYMENT**

Submit your payment along with this agreement in the postage paid envelope provided. Check one below:

CHECK ENCLOSED

CREDIT CARD

AMERICAN EXPRESS

MASTER CARD

VISA

ACCOUNT NUMBER: \_\_\_\_\_ EXP. DATE: \_\_\_\_\_



**MY SIGNATURE BELOW CERTIFIES THAT I HAVE READ, UNDERSTOOD, AND AGREED TO MY RIGHTS AND RESPONSIBILITIES (AS OUTLINED IN THIS AGREEMENT) AND THAT THE INSTITUTION'S CANCELLATION AND REFUND POLICIES (DETAILED IN THIS AGREEMENT) HAVE BEEN CLEARLY EXPLAINED TO ME.**

\_\_\_\_\_  
**STUDENT SIGNATURE**

\_\_\_\_\_  
**DATE**

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\_\_\_\_\_  
**SIGNATURE OF UNIVERSITY OFFICIAL**

\_\_\_\_\_  
**DATE**

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California National University for Advanced Studies  
8550 Balboa Boulevard, Suite 210  
Northridge, CA 91325

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**PAYMENT OPTIONS**

Tuition is due upon enrollment. Select preferred option below:

<input type="checkbox"/> <b>Tuition Assistance</b> Students seeking to defer payment of tuition because of Military or Company reimbursement are required to pay for instructional materials and shipping before course of instruction can begin. Students will be charged a \$150.00 non-refundable fee per course if payment is deferred. If a student chooses to defer tuition a Tuition Deferment Agreement must be completed and submitted with each enrollment agreement. If the student takes the option to pay for tuition up front and collect their assistance afterward, there is no fee.	<input type="checkbox"/> <b>PLAN A</b> <b>PAYMENT IN FULL (TOTAL TRIMESTER COSTS).</b>	<input type="checkbox"/> <b>PLAN B *</b> 3 payments divided over the trimester according to the following: 1 <sup>st</sup> payment must include 1/3 of total trimester tuition, cost of instructional materials and shipping if purchased from CNU plus a processing fee of 10% of the total tuition 2 <sup>nd</sup> payment must include 1/2 of remaining balance and is due 6 weeks after date of course enrollment. 3 <sup>rd</sup> payment must include remaining balance and is due 12 weeks after date of course enrollment. <b>CHECKS NOT ACCEPTED</b>
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**TYPE OF PAYMENT**

Submit your payment along with this agreement in the postage paid envelope provided. Check one below:

- CHECK ENCLOSED
- CREDIT CARD
- AMERICAN EXPRESS
- MASTER CARD
- VISA

ACCOUNT NUMBER: \_\_\_\_\_ EXP. DATE: \_\_\_\_\_

**\*NOTE: Late fees of 1.5% per month of remaining balance may be applied when balance is 30 days overdue. Payments for Plan B will be automatically charged to the credit card when due.**

**STUDENT SIGNATURE (if paying by credit card):** \_\_\_\_\_



**Six Sigma Green Belt  
ENROLLMENT AGREEMENT**  
California National University for Advanced Studies  
8550 Balboa Boulevard, Northridge, CA 91325  
(818) 830-2411 Fax (818) 830-2418

**STUDENT INFORMATION**

Be sure to read this thoroughly, as it represents your consent to enroll as a **Certificate Program** student and abide by the policies outlined herein.

**Name :**

\_\_\_\_\_

*Last**First**Middle*

**Address :**

\_\_\_\_\_

*Street**City/State**Zip/Postal Code*

**TUITION**

This acknowledges my registration at **California National University for Advanced Studies in the Six Sigma Green Belt Certificate Program**. As a Certificate Program student I have the opportunity to take one or more courses, and then later to apply formally for admission to my selected degree program. If accepted to a degree program, I will be given credit for those CNU course/s that I have completed which are applicable.

The tuition and fees below, which are based on a 6-week calendar, cover the requirements for the Six Sigma Green Belt Certificate. Instructional Materials are available for purchase through the CNU Bookstore at the Akademos website as described in the enclosed *Instructional Materials Memorandum*. Therefore, it should be understood that the amount of this contract does not represent the total cost of the degree program. This enrollment agreement only represents the total amount of course enrolled in for this 6-week calendar period and their related fees.

**DESCRIPTION OF CHARGES**

**QAS 301 - SIX SIGMA GREEN BELT CERTIFICATE PROGRAM \$ 1285.00**

*TUITION*

**Instructional Materials are purchased independently by Student \$**

*INSTRUCTIONAL MATERIALS (Refer to enclosed Instructional Materials Memo)*

**Shipping/Handling \$**

*(Shipping Varies By Geographical Location)*

**TOTAL AMOUNT FOR THIS CONTRACT PERIOD: \$**

**THE TOTAL AMOUNT FOR ALL FEES, CHARGES, AND SERVICES THE STUDENT IS OBLIGATED TO PAY FOR THE COURSE OF SERVICE FROM:**

PLEASE CHECK THE BOX FOR YOUR START DATE. IF NO BOX IS CHECKED, THE FIRST DATE WILL BE SCHEDULED.	Start Date	Completion Date
1. <input type="checkbox"/>	_____	_____
2. <input type="checkbox"/>	_____	_____

**Any questions or problems concerning this school which have not been satisfactorily answered or resolved by the school should be directed to the Bureau for Private Postsecondary Education at 2535 Capitol Oaks Drive, Suite 400, Sacramento, CA 95789-0818. Phone: (916) 431-6959.**

This agreement is a legally binding instrument when signed by the student and accepted by *California National University for Advanced Studies*. Your signature on this agreement acknowledges that you have been given reasonable time to read and understand it and (A) a written statement of the refund policy including examples of how it applies and (B) you have reviewed the university website catalog that includes (1) a description of the course or educational service (2) a statement of all material facts concerning *California National University for Advanced Studies* and (3) the program or course of instruction.

**MY SIGNATURE BELOW CERTIFIES THAT I HAVE READ, UNDERSTOOD, AND AGREED TO MY RIGHTS AND RESPONSIBILITIES (AS OUTLINED IN THIS AGREEMENT) AND THAT THE INSTITUTION'S CANCELLATION AND REFUND POLICIES (DETAILED IN THIS AGREEMENT) HAVE BEEN CLEARLY EXPLAINED TO ME.**

\_\_\_\_\_  
 STUDENT SIGNATURE

\_\_\_\_\_  
 DATE

I CERTIFY THAT CALIFORNIA NATIONAL UNIVERSITY FOR ADVANCED STUDIES HAS MET THE DISCLOSURE REQUIREMENTS OF EDUCATION CODE §94810 OF THE PRIVATE POSTSECONDARY AND VOCATION REFORM ACT OF 1998.

\_\_\_\_\_  
 SIGNATURE OF UNIVERSITY OFFICIAL

\_\_\_\_\_  
 DATE

**THIS CONTRACT IS NO LONGER VALID IF IT HAS NOT BEEN SIGNED & RETURNED TO THE UNIVERSITY WITHIN 30 DAYS FROM THE DATE SIGNED BY THE UNIVERSITY OFFICIAL.**

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**CNU shall make all refunds within 30 days of cancellation.**

EXAMPLE: If the student completes only 3 weeks of a 8-week course and paid \$1285.00 in tuition, the refund is calculated as follows: Non-Refundable Registration Fee \$200.00; Tuition minus Registration Fee equals: \$1285 - \$200.00 = \$1085.00). Refundable tuition at 3 weeks of instruction completed (\$1085.00 X 40% = \$434.00).

Student paid: \$1285.00  
 School retains: \$ 851.00  
 School refunds: \$ 434.00

6-Week Course	Refundable Tuition Due After:
1-6 Weeks	1 <sup>st</sup> week = 80% 2 <sup>nd</sup> week = 60% 3 <sup>rd</sup> week = 40% 4 <sup>th</sup> week = 20% 5 <sup>th</sup> week = 0%

ALL NOTICES OF WITHDRAWAL OR REQUESTS FOR REFUNDS MUST BE SUBMITTED IN WRITING, ATTENTION TO:

Stephanie Smith/Registrar's Office  
California National University for Advanced Studies  
8550 Balboa Boulevard, Suite 210  
Northridge, CA 91325

The Student Tuition Recovery Fund (STRF) was established by the Legislature to protect any California resident who attends a private postsecondary institution from losing money if they prepaid tuition and suffered a financial loss as a result of the school closing, failing to live up to its enrollment agreement, or refusing to pay a court judgment. **The STRF Assessment has been paid by California National University for Advanced Studies on the student's behalf. PLEASE NOTE: If the student is not a resident of California, the student is not eligible for protection under, and recovery from, the Student Tuition Recovery Fund.**

**TYPE OF PAYMENT**

Submit your payment along with this agreement in the postage paid envelope provided. Check one below:

CHECK ENCLOSED

CREDIT CARD

AMERICAN EXPRESS

MASTER CARD

VISA

ACCOUNT NUMBER: \_\_\_\_\_ EXP. DATE: \_\_\_\_\_



**Six Sigma Black Belt  
ENROLLMENT AGREEMENT**  
*California National University for Advanced Studies*  
 8550 Balboa Boulevard, Northridge, CA 91325  
 (818) 830-2411 Fax (818) 830-2418

**STUDENT INFORMATION**

Be sure to read this thoroughly, as it represents your consent to enroll as a **Certificate Program** student and abide by the policies outlined herein.

**Name:**

---

<i>Last</i>	<i>First</i>	<i>Middle</i>
-------------	--------------	---------------

**Address :**

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<i>Street</i>	<i>City/State</i>	<i>Zip/Postal Code</i>
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**TUITION**

This acknowledges my registration at **California National University for Advanced Studies in the Six Sigma Black Belt Certificate Program**. As a Certificate Program student I have the opportunity to take one or more courses, and then later to apply formally for admission to my selected degree program. If accepted to a degree program, I will be given credit for those CNU course/s that I have completed which are applicable.

The tuition and fees below, which are based on a 8-week calendar, cover the requirements for the Six Sigma Black Belt Certificate. Instructional Materials are available for purchase through the CNU website as described in the enclosed *Instructional Materials Memorandum*. Therefore, it should be understood that the amount of this contract does not represent the total cost of the degree program. This enrollment agreement only represents the total amount of course enrolled in for this 8-week calendar period and their related fees.

**DESCRIPTION OF CHARGES**

<b>QAS 401 - 3 UNITS - SIX SIGMA BLACK BELT CERTIFICATE PROGRAM</b>	<b>\$ 1985.00</b>
<i>TUITION</i>	\$
<b>FEES: (Shipping Varies By Geographical Location)</b>	
<b>Instructional Materials can be purchased independently by Student</b>	\$
<i>INSTRUCTIONAL MATERIALS (Refer to enclosed Instructional Materials Memo)</i>	
<b>TOTAL AMOUNT FOR THIS CONTRACT PERIOD</b>	\$

**THE TOTAL AMOUNT FOR ALL FEES, CHARGES, AND SERVICES THE STUDENT IS OBLIGATED TO PAY FOR THE COURSE OF SERVICE FROM:**

PLEASE CHECK THE BOX FOR YOUR START DATE. IF NO BOX IS CHECKED, THE FIRST DATE WILL BE SCHEDULED.		<b>Start Date</b>		<b>Completion Date</b>
1. <input type="checkbox"/>				
2. <input type="checkbox"/>				

**Any questions or problems concerning this school which have not been satisfactorily answered or resolved by the school should be directed to the Bureau for Private Postsecondary Education at 2535 Capitol Oaks Drive, Suite 400, Sacramento, CA 95789-0818. Phone: (916) 431-6959.**

This agreement is a legally binding instrument when signed by the student and accepted by *California National University for Advanced Studies*. Your signature on this agreement acknowledges that you have been given reasonable time to read and understand it and (A) a written statement of the refund policy including examples of how it applies and (B) you have reviewed the university website catalog that includes (1) a description of the course or educational service (2) a statement of all material facts concerning *California National University for Advanced Studies* and (3) the program or course of instruction.

**MY SIGNATURE BELOW CERTIFIES THAT I HAVE READ, UNDERSTOOD, AND AGREED TO MY RIGHTS AND RESPONSIBILITIES (AS OUTLINED IN THIS AGREEMENT) AND THAT THE INSTITUTION'S CANCELLATION AND REFUND POLICIES (DETAILED IN THIS AGREEMENT) HAVE BEEN CLEARLY EXPLAINED TO ME.**

\_\_\_\_\_  
STUDENT SIGNATURE

\_\_\_\_\_  
DATE

I CERTIFY THAT CALIFORNIA NATIONAL UNIVERSITY FOR ADVANCED STUDIES HAS MET THE DISCLOSURE REQUIREMENTS OF EDUCATION CODE §94810 OF THE PRIVATE POSTSECONDARY AND VOCATION REFORM ACT OF 1998.

\_\_\_\_\_  
SIGNATURE OF UNIVERSITY OFFICIAL

\_\_\_\_\_  
DATE

**THIS CONTRACT IS NO LONGER VALID IF IT HAS NOT BEEN SIGNED & RETURNED TO THE UNIVERSITY WITHIN 30 DAYS FROM THE DATE SIGNED BY THE UNIVERSITY OFFICIAL.**

**\*THIS CONTRACT BECOMES NULL AND VOID AFTER ONE YEAR FROM STUDENT SIGNATURE ON THE AGREEMENT.**

**STUDENT'S RIGHT TO CANCEL AND REFUND POLICY**

The Course Start Date is defined on the front page of this Enrollment Agreement. *California National University* for Advanced Studies (CNU) guarantees that students will have access to their course study guides, via e-mail, US mail, or Internet by the selected Start Date of the Trimester. In a given trimester, a student is expected to combine guided and self-instruction and progress through the course according to the prescribed schedule. Students are required to sign a course enrollment agreement for each course taken. Total potential tuition/financial commitment for a 121-unit degree program: \$300 per unit X 121 units equals \$36,300, graduation fee of \$300.00. Total potential tuition/financial commitment for a 36-unit degree program: \$330 per unit X 36 units equals \$11,880, graduation fee of \$300.00. Total potential tuition/financial commitment for an 18-unit H.R. certificate program: \$300 per unit X 18 units equals \$5400, certificate completion fee of \$150.00. Estimated costs of textbooks and course materials per course approximately \$150.00 or more, shipping varies according to geographical location. The student has the Right to Cancel by notifying the CNU Registrar in writing within five (5) days of enrolling and will receive a full refund of course fees paid to CNU. A student withdrawing from CNU or dropping a course may only be assessed a one-time "registration fee" of either \$75 or 20% of the tuition charge per course (not to exceed \$200 per degree program). Students requesting cancellation during subsequent weeks from their Start Date receive their refund according to the Refund Policy and formula for the refundable tuition amount, as defined in the table below.

**CNU shall make all refunds within 30 days of cancellation.**

EXAMPLE: If the student completes only 3 weeks of a 8-week course and paid \$1985.00 in tuition, the refund is calculated as follows: Non-Refundable Registration Fee \$200.00; Tuition minus Registration Fee equals: \$1985 - \$200.00 = \$1785.00). Refundable tuition at 3 weeks of instruction completed (\$1785.00 X 60% = \$1071.00).

Student paid: \$1985.00  
School retains: \$ 914.00  
School refunds: \$1071.00

8-Week Course	Refundable Tuition Due After:
1-8 Weeks	1 <sup>st</sup> week = 80% 2 <sup>nd</sup> week = 70% 3 <sup>rd</sup> week = 60% 4 <sup>th</sup> week = 50% 5 <sup>th</sup> week = 40% 6 <sup>th</sup> – 8th week = 0%

ALL NOTICES OF WITHDRAWAL OR REQUESTS FOR REFUNDS MUST BE SUBMITTED IN WRITING, ATTENTION TO:

Stephanie Smith/Registrar's Office  
California National University for Advanced Studies  
8550 Balboa Boulevard, Suite 210  
Northridge, CA 91325

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**TYPE OF PAYMENT**

Submit your payment along with this agreement in the postage paid envelope provided. Check one below:

CHECK ENCLOSED

CREDIT CARD

AMERICAN EXPRESS

MASTER CARD

VISA

ACCOUNT NUMBER: \_\_\_\_\_ EXP. DATE: \_\_\_\_\_



**Six Sigma Combination Belt  
ENROLLMENT AGREEMENT**  
*California National University for Advanced Studies*  
 8550 Balboa Boulevard, Northridge, CA 91325  
 (818) 830-2411 Fax (818) 830-2418

**STUDENT INFORMATION**

Be sure to read this thoroughly, as it represents your consent to enroll as a **Certificate Program** student and abide by the policies outlined herein.

**Name :**

\_\_\_\_\_

*Last* *First* *Middle*

**Address :**

\_\_\_\_\_

*Street* *City/State* *Zip/Postal Code*

**TUITION**

This acknowledges my registration at **California National University for Advanced Studies in the Six Sigma Green & Black Belt Combination Certificate Program**. As a Certificate Program student I have the opportunity to take one or more courses, and then later to apply formally for admission to my selected degree program. If accepted to a degree program, I will be given credit for those CNU course/s that I have completed which are applicable.

The tuition and fees below, which are based on a 15-week calendar, cover the requirements for the Six Sigma Green & Black Belt Combination Certificate. Instructional Materials are available for purchase through the CNU Bookstore at the Akademos website as described in the enclosed *Instructional Materials Memorandum*. Therefore, it should be understood that the amount of this contract does not represent the total cost of the degree program. This enrollment agreement only represents the total amount of course enrolled in for this 15-week calendar period and their related fees.

**DESCRIPTION OF CHARGES**

**QAS 501 - 3 UNITS -SIX SIGMA GREEN & BLACK BELT COMBINATION CERTIFICATE PROGRAM \$ 2900.00**

*TUITION*

**Instructional Materials are purchased independently by Student** \_\_\_\_\_ \$

*INSTRUCTIONAL MATERIALS (Refer to enclosed Instructional Materials Memo)*

**Shipping/Handling** \_\_\_\_\_ \$

*(Shipping Varies By Geographical Location)*

**TOTAL AMOUNT FOR THIS CONTRACT PERIOD:** \_\_\_\_\_ \$

**THE TOTAL AMOUNT FOR ALL FEES, CHARGES, AND SERVICES THE STUDENT IS OBLIGATED TO PAY FOR THE COURSE OF SERVICE FROM:**

PLEASE CHECK THE BOX FOR YOUR START DATE. IF NO BOX IS CHECKED, THE FIRST DATE WILL BE SCHEDULED.	<b>Start Date</b>  1. <input type="checkbox"/> _____ 2. <input type="checkbox"/> _____	<b>Completion Date</b>  _____ _____
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**Any questions or problems concerning this school which have not been satisfactorily answered or resolved by the school should be directed to the Bureau for Private Postsecondary Education at 2535 Capitol Oaks Drive, Suite 400, Sacramento, CA 95789-0818. Phone: (916) 431-6959.**

This agreement is a legally binding instrument when signed by the student and accepted by *California National University for Advanced Studies*. Your signature on this agreement acknowledges that you have been given reasonable time to read and understand it and (A) a written statement of the refund policy including examples of how it applies and (B) you have reviewed the university website catalog that includes (1) a description of the course or educational service (2) a statement of all material facts concerning *California National University for Advanced Studies* and (3) the program or course of instruction.

**MY SIGNATURE BELOW CERTIFIES THAT I HAVE READ, UNDERSTOOD, AND AGREED TO MY RIGHTS AND RESPONSIBILITIES (AS OUTLINED IN THIS AGREEMENT) AND THAT THE INSTITUTION'S CANCELLATION AND REFUND POLICIES (DETAILED IN THIS AGREEMENT) HAVE BEEN CLEARLY EXPLAINED TO ME.**

\_\_\_\_\_  
 STUDENT SIGNATURE

\_\_\_\_\_  
 DATE

I CERTIFY THAT CALIFORNIA NATIONAL UNIVERSITY FOR ADVANCED STUDIES HAS MET THE DISCLOSURE REQUIREMENTS OF EDUCATION CODE §94810 OF THE PRIVATE POSTSECONDARY AND VOCATION REFORM ACT OF 1998.

\_\_\_\_\_  
 SIGNATURE OF UNIVERSITY OFFICIAL

\_\_\_\_\_  
 DATE

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**CNU shall make all refunds within 30 days of cancellation.**

EXAMPLE: If the student completes only 3 weeks of a 15-week course and paid \$2900.00 in tuition, the refund is calculated as follows: Non-Refundable Registration Fee \$2900.00 - \$200.00 = \$2700.00). Refundable tuition at 3 weeks of instruction completed (\$2700.00 X 60% = \$1620.00).

Student paid: \$2900.00  
 School retains: \$1280.00  
 School refunds: \$1620.00

15-Week Course	Refundable Tuition Due After:
1-15 Weeks	1 <sup>st</sup> week = 80% 2 <sup>nd</sup> week = 70% 3 <sup>rd</sup> week = 60% 4 <sup>th</sup> week = 50% 5 <sup>th</sup> week = 40% 6 <sup>th</sup> week = 30% 7 <sup>th</sup> week = 20% 8 <sup>th</sup> week = 10% 9 <sup>th</sup> – 15 <sup>th</sup> week = 0%

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AMERICAN EXPRESS

MASTER CARD

VISA

ACCOUNT NUMBER: \_\_\_\_\_ EXP. DATE: \_\_\_\_\_



**CALIFORNIA NATIONAL UNIVERSITY**  
FOR ADVANCED STUDIES

8550 Balboa Blvd #210 • Northridge, California 91325

Tel: (818) 818-830-2411 • Fax: (818) 830-2418

<http://www.cnuas.edu>