

Youngstown State University

CIVIL ENGINEERING PROGRAM

Undergraduate Student Handbook

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FOREWORD

This handbook is intended to serve only as a guide and source of information for undergraduate students majoring in Civil Engineering. It will be revised annually and made available at the beginning of the fall semester. The YSU Bulletin (Undergraduate Edition) will remain as the official source of all University regulations and policies.

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CIVIL ENGINEERING

Civil engineers are primarily responsible for planning, design, and construction of the world's infrastructure, as well as commercial and industrial facilities. They plan, produce, and help operate the world's transportation systems. They must develop, yet conserve water resources. They play a large role in designing environmental facilities to treat wastewater and air emissions, and to safely dispose of solid and hazardous solid wastes. They are involved in urban development, designing buildings, bridges, streets, water and sewer lines, etc. Civil engineers also work in industries, designing, building and testing products to meet the needs of the world's population.

In meeting these responsibilities, civil engineers work as members of a team. They commonly work with professionals from other fields of engineering, architecture, planning, and business, as well as engineering technologists and technicians, to successfully complete a project.

As a civil engineer, you will be in the middle of the action – a highly skilled professional working directly on vital matters affecting mankind. Most people can only worry about pollution, droughts, floods, hurricanes, etc. As a civil engineer, you can help eliminate or greatly reduce the destructive power of these problems. Civil engineering graduates work for consultants, manufacturers, construction companies, utilities, and for government bodies at all levels. Many civil engineers own their own businesses.

HISTORICAL BACKGROUND

Undergraduate study in engineering at YSU was initiated in the late 1930's under the degree designation of Bachelor of Science (with a major specified in the engineering discipline). With the establishment of The William Rayen School of Engineering in 1946, the engineering programs were restructured, and the degree title was changed to Bachelor of Engineering. The basic four-year undergraduate engineering program in Civil Engineering has been continuously accredited by the Accreditation Board for Engineering and Technology (ABET), and its predecessor organization, since 1959. From 1993 to 2002, the program name was changed to "Civil & Environmental Engineering". Graduate study in Civil Engineering was started in 1968 with the organization of the Graduate School. The master's degree program is accredited under the umbrella of university accreditation by the North Central Association of Colleges and Secondary Schools.

MISSION

The mission of the Civil Engineering program is to:

- offer high-quality bachelor's and master's level programs in civil engineering that encompass basic engineering sciences, as well as both traditional and emerging areas of the discipline;
- prepare graduates to adapt to global and domestic engineering challenges and changing industry practices;
- foster student-faculty relationships that enrich teaching and learning, develop scholarship, and encourage public service;
- maintain an academic structure characterized by integrity, and by respect for students, society, the environment, and the civil engineering profession;
- prepare graduates for, and facilitate, lifelong intellectual and professional development; and
- contribute to economic prosperity of the region, state, and nation by enhancing the size and competitiveness of the civil engineering workforce.

PROGRAM EDUCATIONAL OBJECTIVES

The Civil Engineering program will provide an academic environment rich in opportunities for students to develop the knowledge and skills necessary for productive and rewarding careers and lives. Specifically, the program will prepare graduates to:

1. excel in any sector(s) of civil engineering practice, including consulting, government, construction, and industry;
2. complete graduate study in civil engineering or a related field;
3. communicate effectively with a variety of audiences through writing and speaking;
4. apply creativity and a strong understanding of math, science, computers, and engineering to develop innovative solutions to engineering problems;
5. understand and effectively incorporate the role of social, ethical, political, economic, and environmental considerations in their professional careers;
6. work effectively as a member of a team or organization, and excel in a leadership role where appropriate;
7. serve their profession and society through involvement in professional and service organizations;
8. achieve registration as a Professional Engineer; and
9. continue their intellectual and professional growth through lifelong learning.

PROGRAM OUTCOMES

The undergraduate program in Civil Engineering at YSU achieves the following student learning outcomes:

1. Students will obtain a broad education necessary to understand the impact of civil engineering solutions in a global, societal, and environmental context.
2. Students will be able to solve civil engineering problems in practice by applying fundamental knowledge of mathematics, science, and engineering, and using modern engineering techniques, tools, equipment, and computer applications.
3. Students will be able to design systems, components, or processes to meet specific needs within the following realistic constraints: economic; social; political; environmental; sustainability; ethical; health and safety; and constructability.
4. Students will be able to design and conduct experiments, and to analyze and interpret data within the various civil engineering specialty disciplines.
5. Students will understand the fundamentals of business, management, and leadership, including organization, planning, bidding, report preparation, construction, and functioning effectively as a member of a multi-disciplinary team.
6. Students will be able to communicate effectively, via speaking and writing, with both technical and non-technical audiences.
7. Students will have a solid understanding of professional and ethical responsibility, the importance of professional licensure, and the need for continued professional development.

CURRICULUM DESIGN

The CE curriculum has been carefully designed to achieve the established educational objectives and outcomes. Courses at all levels play important roles in developing the skills that graduates will need to succeed in engineering practice. The freshman engineering sequence (ENGR 1550 and 1560) gives students an overview of the engineer's role in society, introduces them to the creativity involved in engineering design, helps them to make sound career choices, and equips them with basic tools of computer technology they will need in their academic and professional careers.

In their freshman and sophomore years, students gain a solid foundation in math and science that is essential to an understanding of engineering topics and development of problem-solving skills. During the sophomore and junior years, students strengthen this foundation with several fundamental engineering courses. In the junior and senior years, the curriculum provides rigorous background in all major civil engineering disciplines, as well as the opportunity to gain the depth of knowledge graduates will need to meet the expectations of employers in their first professional job.

Certain critical elements of the educational objectives and program outcomes are integrated throughout the curriculum. These include a progressive development of civil engineering design skills, oral and written communication skills, and awareness of contemporary societal, ethical and global issues pertinent to engineering practice. The importance of "soft skills" to the success of modern engineers has frequently been noted by professional engineering societies, as well as by the program's alumni and employers. YSU's innovative General Education Requirements (GER) ensures that students develop strong skills in writing, speaking, and critical thinking through a combination of focused out-of-department courses and a series of "intensive" courses in the major.

Engineering is commonly known as "the problem-solving profession." Strong emphasis is placed on the development of problem-solving skills in major (CEEGR) courses through a variety of assignments that increase in complexity with the level of the courses. It is said that "the scientist seeks to understand what is, while the engineer seeks to create what never was." The CE curriculum gradually builds the student's ability to design civil engineering facilities/systems under a variety of realistic constraints. This is accomplished by the integration of design experiences throughout the curriculum, beginning in the freshman year with ENGR 1550. In engineering science courses (e.g., Statics, Strength of Materials, Structural Analysis, Fluid Mechanics, Fundamentals of Environmental Engineering, Transportation Engineering, etc.), faculty assign open-ended problems that require the application of engineering principles to design a simple facility or system. Through the CE curriculum, students develop basic proficiency in five major areas of civil engineering – structural; transportation; environmental; water resources; and geotechnical. In junior and senior level design courses, all students gain advanced proficiency in engineering design in at least four of these areas.

The entire curriculum is structured to prepare students for the program's capstone design project course, CEEGR 4863 (Integrated Design Project). By the time students take this course, they have gained progressively more challenging experience in engineering problem-solving and design, as well as the broad knowledge and skills necessary to understand and communicate the impact of their solutions in a global, societal, and environmental context. In CEEGR 4863, students work in teams of four or five to design a complete facility from start to finish, including site work, environmental review, erosion and sediment control plan, traffic control, pavement and parking lot design, foundation design, structural design, storm water drainage and retention facilities, water supply, and wastewater disposal. In the design process, consideration must be given to environmental impact on the surrounding community, cost, and construction procedures/sequence. A detailed design report

and construction plans are prepared and presented orally to the faculty and other students. This comprehensive project is designed to be virtually indistinguishable from a first professional assignment typically expected of a civil engineering graduate.

The CE curriculum includes at least seven laboratory courses. In addition to two freshman chemistry labs, all students take required laboratory courses in four areas of civil engineering – Surveying; Strength of Materials; Fluid Mechanics; Structural Analysis, and Geotechnical Engineering. Students may take an additional lab in Water Quality Analysis as an elective. Laboratory courses are an essential part of the curriculum that contribute to several of the program outcomes and objectives, including the development of skills in experimental design, critical analysis of data, application of modern engineering techniques (e.g., computer software), written and oral communication, and teamwork.

LABORATORY FACILITIES

Laboratory experiences contribute substantially to the accomplishment of the CE program objectives and outcomes. The program maintains six laboratories, each focusing on a major field of civil engineering. Five of these are used to support laboratory courses that are part of the program curriculum.

The Surveying Laboratory contains sufficient surveying equipment to accommodate several surveying teams, including levels, theodolites, and a variety of basic surveying accessories (100 ft. steel tapes, chaining pins, plumb bobs, leveling rods, range poles, etc.). Recently, more advanced capabilities have been added through the purchase of four Topcon auto-focus total stations and two hand-held, eight-channel Trimble GPS receivers.

The Department's spacious Strength of Materials Laboratory houses a variety of testing equipment and instrumentation, including a 120 kip MATS (Microprocessor-based Automatic Testing System), a 60 kip UTC, impact testing systems, torsion machines, and hardness testers. The laboratory is also equipped with a number of other electronic instruments used by undergraduate students in their experiments, as well as an updated MTS dynamic/impact loading system with actuators and load cells. All load-measuring devices are calibrated and certified annually.

The Fluid Mechanics Laboratory is equipped to meet the instructional needs of CEEGR 3716L. Most of the experiments are conducted using hydraulic benches capable of accepting a number of attachments for analyzing fluid properties and principles. Attachments are available for studies of center of pressure, impact of a jet, flow over a weir, discharge through an orifice, losses in pipe flow, and Bernoulli's equation. New hydraulic benches and attachments are purchased periodically to ensure that students have access to properly functioning equipment.

The Soil Mechanics Laboratory is equipped for many measurements performed in commercial soils laboratories, including grain size distribution, moisture content, direct shear, consolidation, unconfined compression, etc. In recent years, the number of student stations available for experiments has been increased in order to allow several (four to six) student groups to work independently. A direct shear instrument with digital controls was recently added.

The Environmental Engineering Laboratory is well equipped for many analyses of importance in environmental engineering. Primary emphasis is placed on the areas of water supply, wastewater

treatment, and pollution of natural waters. Students use the lab's analytical capabilities to perform measurements of pH, alkalinity, suspended solids, turbidity, hardness, dissolved oxygen, BOD, phosphorus, nitrate, chlorophyll *a*, and coliform bacteria. In addition, a wide range of equipment is available for field sampling and analysis. Safety features, such as a chemical shower, eye-wash station, first aid kit, and ventilated hood, have been installed and are routinely maintained by the University's Department of Environmental and Occupational Health and Safety.

The Concrete Mixtures Laboratory is equipped with both table-top and standard concrete mixers, steam curing cabinets, a freeze-thaw cabinet, nondestructive testing equipment, Windsor probe, impact hammers, sonometers, etc.

In addition to the laboratories maintained by the CE program, students also have access to the College of Engineering and Technology Computer Laboratories. This facility consists of four teaching labs, one open lab, and one advanced/graduate lab. These labs house a total of about 140 desktop PC's, all less than four years old. All PC's have high speed Internet access, and can run a wide variety of software packages from the network server, including MS Office (Word, Excel, PowerPoint, etc.), MS Front Page, AutoCAD, Solid Works, and STAAD-III. Computers in the open lab are available for use by any engineering student on a first-come, first-served basis.

In addition to use for coursework, all of the above facilities are available for use by CE students performing research projects or preparing for engineering competitions.

ACCREDITATION

The Accreditation Board for Engineering and Technology (ABET) is the primary organization responsible for the evaluation and accreditation of college level engineering programs in the U.S. Both ABET and professional engineering societies (such as the American Society of Civil Engineers) establish criteria that programs must meet in order to ensure that graduates are rigorously prepared for professional practice. Since 1959, the Civil Engineering (CE) program has been continuously accredited by ABET (and its predecessor organization) under the criteria for Civil Engineering programs. Following the last general review of programs at YSU, ABET granted accreditation to the CE program through September 30, 2008. The program will be evaluated by ABET next in the fall of 2007.

ADMISSION TO THE PROGRAM

Students entering the College of Engineering and Technology from high school are classified as either First-Year Engineering or Pre-Engineering and Technology majors. To enter First-Year Engineering, students must have a minimum SAT math score of 530 or ACT math score of 23, or be placed in MATH 1571 (Calculus 1) by the Math Placement Test. Students who do not meet these criteria are classified as Pre-Engineering and Technology majors. Student records for freshman engineering students are kept by the College's freshman advisors. Students may specify an intended major by notifying their freshman advisor.

In order to transfer into the Civil Engineering program, students must complete at least 12 semester hours of courses, earn grades of C or better in MATH 1571, ENGL 1550, and CHEM 1515/1515L,

and have a GPA of 2.30 or above. Students generally transfer into an engineering major program at the end of the freshman year, or the beginning of the sophomore year. Students will not be allowed to enroll in junior level CEEGR courses until they have transferred into the CE program. Under certain circumstances, a student may be admitted to the program provisionally. This requires a recommendation from the Department Chair, and approval by the Dean, and usually carries conditions that a student must meet in order to continue in the program.

CURRICULUM STRUCTURE

The Civil Engineering program provides all students with a broad background in several areas of civil engineering. In addition, the program offers the opportunity for limited specialization within the civil engineering discipline through three upper level departmental elective courses. A curriculum sheet listing all of the required courses and showing a typical four year plan for completion is presented in Appendix A. The prerequisites for all required courses are also listed in Appendix A. A summary of the course content of the curriculum is contained in the table below.

Category	Semester Hours
Major (CEEGR) Courses	54 s.h.
Out-of-Dept. Engineering Courses	15 s.h.
Mathematics	18 s.h.
Basic Science	15 s.h.
General Education *	21 s.h.
Communications *	9 s.h.
TOTALS	132 s.h.

* Basic University requirements common to all students.

The requirements for the B.E. degree in Civil Engineering may change from year to year. However, a student may graduate under any set of requirements in effect while he or she is continuously enrolled in the CE program.

COURSE OFFERINGS

Careful planning is required to ensure that students maintain a proper sequence of coursework and progress efficiently through the curriculum. In order to assist with academic planning, each Civil Engineering student is assigned a faculty advisor who monitors the student's progress through the program. To further assist students in planning their academic schedule, the following table contains a listing of the normal undergraduate course offerings in the major for each semester of the academic year.

Fall	Spring	Summer
CEEGR 2601	CEEGR 2601	CEEGR 2601
CEEGR 2610	CEEGR 2602	CEEGR 2602
CEEGR 2610L	CEEGR 2602L	CEEGR 2602L
CEEGR 3716	CEEGR 3717	CEEGR 2610
CEEGR 3716L	CEEGR 4863	CEEGR 2610L
CEEGR 3720	CEEGR 4881	
CEEGR 3736	CEEGR 4881L	
CEEGR 3749		
CEEGR 3749L		
CEEGR 5855		
CEEGR 5856		
CEEGR 5877		

The three departmental electives will generally be selected from the following list:

- CEEGR 3751/3751L – Water Quality Analysis
- CEEGR 4800 – Special Topics
- CEEGR 4812 – Construction Management
- CEEGR 4835 – Highway Design (D)
- CEEGR 4879 – Civil Engineering Analysis
- CEEGR 5820 – Pavement Material and Design (D)
- CEEGR 5829 – Civil Engineering Materials – Concrete
- CEEGR 5837 – Environmental Engineering Design (D)
- CEEGR 5849 – Structural Analysis 2
- CEEGR 5882 – Foundation Engineering (D)
- CEEGR 5884 – Solid & Hazardous Waste Management

At least one elective must be a design course (indicated by “D” above). An upper level out-of-department engineering course may be used for one elective with the approval of the Civil Engineering Program Coordinator. A tentative schedule of CEEGR elective courses for the next four years is provided in Appendix A.

Most CEEGR classes are offered during the daytime. Occasionally, to accommodate the needs of students or instructors, CEEGR classes may be offered at night. In addition, many courses outside the department, (e.g., mathematics, basic sciences, and general education) are frequently available at night. However, a complete night program is not offered.

COOPERATIVE EDUCATION (CO-OP)

The Civil Engineering program offers an optional cooperative education (“co-op”) experience. This option provides students with valuable work experience that supplements and enhances their academic program. Co-op students must complete all of the normal requirements for graduation from the program, in addition to the co-op assignment(s). To participate in the co-op experience, students must meet the following qualifications:

1. Successfully complete all courses required in the first two years of the Civil Engineering program as specified in the applicable YSU Undergraduate Bulletin;

2. Maintain an overall GPA of 2.5 or above in all required coursework;
3. Maintain an unrecalculated GPA of 2.0 in all engineering courses;
4. Maintain an unrecalculated GPA of 2.0 in all major (CEEGR) courses; and
5. Obtain approval of the Department Chair and Engineering Co-op Coordinator.

In order to pursue a co-op assignment, the student will first work with the University's Coordinator of Professional Practice to identify an appropriate employment opportunity. Assistance will be provided in developing student resumes and arranging interviews with prospective employers. The employer retains the right to interview, evaluate, and select prospective cooperative education students. Salary, working conditions and fringe benefits are negotiated by the student and the employer. Once an opportunity is located, a Co-op Agreement is signed by both the employer and the student, with approval by the Department Chair. The student then registers for either ENGR 3798 (first assignment) or ENGR 4898 (subsequent assignments), and obtains a copy of the course syllabus from the Department Chair. To successfully complete the co-op assignment, Civil Engineering students must:

1. Work a minimum of 300 hours;
2. Maintain a log book to record the number of hours worked each week and a brief description of their work responsibilities;
3. Submit a 3-5 page summary (typed, double-spaced) of the work experience to the Department Chair before the end of the semester; and
4. Complete the Student Co-op Evaluation Form and return it to the Coordinator of Professional Practice.

Since most CEEGR courses are only offered once per year, it is generally not possible for students to pursue a traditional alternating co-op experience without significantly lengthening the time required for completion of the program. Rather, students will normally find that one of the following options permits more efficient coordination of co-op (or perhaps more accurately termed "internship") experience(s) with the academic program:

1. Pursue full-time or part-time co-op/internship employment during summers;
2. Pursue part-time co-op/internship employment concurrently with full-time or part-time enrollment in courses during the academic year; or
3. Pursue full-time co-op/internship employment for an entire academic year, then return to full-time academic enrollment the next year.

At the end of each work period, the student will be evaluated by the employer using the Employer Co-op Evaluation Form. The Department Chair will also evaluate the student's work based on the log book and summary paper submitted, and notify the Engineering Co-op Coordinator of the letter grade to be awarded for ENGR 3798 or 4898.

GENERAL EDUCATION REQUIREMENTS

The Accreditation Board for Engineering and Technology (ABET) has developed a list of eleven key skills that all graduates of engineering programs must demonstrate. While technical skills (e.g., problem solving, design, etc.) normally associated with engineering are prominent on this list, it may be surprising to many students that the majority (six of the eleven items) are general skills needed for success in almost any field. These include:

1. an ability to function on multi-disciplinary teams;
2. an understanding of professional and ethical responsibility;
3. an ability to communicate effectively;
4. the broad education necessary to understand the impact of engineering solutions in a global/societal context;
5. a recognition of the need for, and an ability to engage in, life-long learning; and
6. a knowledge of contemporary issues.

These skills are essential to all engineers, but perhaps even more so to civil engineers, since they must interact frequently with clients and other professionals from many different disciplines, as well as the general public.

One way in which CE students gain these important skills is through YSU's comprehensive General Education Requirements (GER). All students entering YSU after Fall of 2000 must take the following courses in order to fulfill the GER:

1. ENGL 1550 and 1551 – Writing 1 and 2 (6 SH total);
2. COMM 1545 – Communication Theory and Practice (3 SH);
3. Mathematics – one course; CE students will exceed this by taking the math courses required by the program.
4. Knowledge Domain Courses:
 - a. *Natural Science (NS)* – 2-3 courses (6-9 SH); CE students will exceed this by taking the basic science courses required by the program;
 - b. *Artistic and Literary Perspectives (AL)* – 2 or 3 courses (6-9 SH);
 - c. *Societies and Institutions (SI)* – 2 or 3 courses (6-9 SH); the total of AL and SI courses must equal at least five;
 - d. *Personal and Social Responsibility (PS)* – 2 courses (6 SH);
 - e. *Selected Topics and Electives (ST)* – one course; CE students will exceed this by taking the math and science courses required by the program;
 - f. *Capstone* course – one course; CE students meet this requirement by taking CEEGR 4863 (Integrated Design Project).
5. Intensive Courses – CE students will meet the following intensive course requirements by taking approved courses in the major:
 - a. *Writing Intensive Courses* – two courses:
 - CEEGR 3716L – Fluid Mechanics Lab
 - CEEGR 4881L – Geotechnical Engineering Lab
 - b. *Oral Communication Intensive Courses* – one course:
 - CEEGR 3716L – Fluid Mechanics Lab
 - c. *Critical Thinking Intensive Courses* – two courses:
 - CEEGR 3717 – Hydraulic Design
 - CEEGR 5855 – Reinforced Concrete Design

A more detailed description of the GER is provided, along with lists of approved Knowledge Domain Courses, on pages 43-48 of the 2006-07 Undergraduate Bulletin and in each Schedule of Classes. The lists of Knowledge Domain Courses may expand somewhat as additional courses are approved by the General Education Committee. While students are free to choose any courses from these lists to fulfill the GER, certain courses are more applicable than others in meeting the program outcomes established by the Civil Engineering program. Thus, it is recommended that students select their Knowledge Domain electives from the list below if possible.

Students who were admitted to YSU prior to Fall, 2000, and have been continuously enrolled, may elect to complete the old General Education Requirements. For further guidance in selecting the most appropriate GER model or courses, students are encouraged to meet with their academic advisor.

Education in the key skills identified by ABET is not restricted to the GER courses. The CE faculty attempt to incorporate instruction and assignments designed to develop these skills in virtually every major (CEEGR) course in the curriculum. Assignments involving writing, speaking, teamwork, professional and ethical considerations, use of life-long learning skills, etc., are common in courses at all levels.

Recommended General Education Knowledge Domain Electives
<p><u>Artistic and Literary Perspectives:</u> ART 1542 – Survey of Art History 2 ENGL 1590 – Introduction to Literature ENGL 2610 – World Literature ENGL 2618 – American Literature and Diversity MUSED 2621 – Music Literature and Appreciation</p>
<p><u>Societies and Institutions:</u> ECON 2610 – Principles 1 ECON 2630 – Principles 2 GEOG 2626 – World Geography GEOG 2640 – Human Geography HIST 1511 – World Civilization to 1500 HIST 1512 – World Civilization from 1500 HIST 2605 – Turning Points in U.S. History 1 HIST 2606 – Turning Points in U.S. History 2 POLIT 1550 – Politics and Globalization POLIT 1560 – American Government RELIG 2601 – Introduction to World Religions RELIG 2617 – Introduction to Eastern Religions</p>
<p><u>Personal and Social Responsibility:</u> COUNS 1588 – Exploring Leadership: Theory and Practice HSC 1568 – Healthy Lifestyles PHIL 2609 – Technology and Human Values PHIL 2625 – Introduction to Professional Ethics</p>

ADVISEMENT AND CLASS ENROLLMENT

Enrollment in all engineering classes except ENGR 1550, 1560, 1560L, CEEGR 2610, and CEEGR 2610L requires admission to one of the engineering programs. Students registering for such classes without being enrolled in an engineering program should secure prior permission to register for that class from the Department Chair or the Dean of Engineering and Technology. Students are asked to confirm that they have completed the prerequisites for any course for which they register. Any student who has not completed such prerequisites may be administratively withdrawn from the class(es).

All students are encouraged to meet with their academic advisor each semester before registering for classes. CE students who have completed less than 75 semester hours of academic credit must obtain their academic advisor's approval in order to register for classes. The advisement period begins one week before the start of registration. Advisement sign-up sheets are posted on each advisor's door. A listing of each student's advisor is posted on the bulletin board near the entrance to the Civil Engineering department office (Room 2460, Moser Hall). Students are also encouraged to contact their assigned academic advisor anytime during the year to discuss any problems that may arise.

GRADUATION PROCESSES AND PAPERWORK

In order to certify a civil engineering student for graduation (i.e., to ensure that he or she has met all the degree requirements), a "Certification of Graduation" form (also known as a Senior Sheet) must be completed and signed by the department chairperson. A copy of the form is presented in Appendix B. Additional copies are available in the department office. The student is encouraged to continually update this document as he or she progresses through the program. An updated sheet is also maintained in the student's file which is housed in the department office.

A formal application for graduation must be filed at the Bursar's Office before 5:00 p.m. on Friday of the third week of the semester in which the student intends to graduate (please check the Schedule of Classes for that semester for the exact date). This form (Graduation Application) may be obtained in the department office, the Engineering Dean's Office, or the Office of the Registrar. If the student does not graduate at the commencement exercise for which the formal application has been filed, the application must be reactivated. In order to ensure that a student is "on track" to graduate, he or she should submit the "Plan of Courses for Graduation" form (copy shown in Appendix B) to the department office after the completion of 75 semester hours toward the degree.

DEVIATIONS FROM THE APPROVED CURRICULUM

Normally, civil engineering students must follow the curriculum as it appears in Appendix A. There are times, however, when a student may not be able to follow this specified format exactly due to unusual circumstances. A student may, therefore, petition the Civil Engineering Curriculum Committee, through his or her advisor, to request a substitution or deviation from the specified curriculum. The departmental form for such a petition is shown in Appendix B. Copies of the form are available in the department office. Such a request must be justified by a description of the circumstances. The reviewing committee has no authority to alter University policies or regulations. Any curriculum substitutions must be consistent with ABET accreditation criteria.

CREDIT BY EXAMINATION

When a student has prior successful academic or practical experience in a subject area corresponding to a course in the curriculum, he or she may seek Credit by Examination. This opportunity is only available to a student who can demonstrate ability and knowledge in a particular subject area, and thus earn credit in a course without enrolling in it.

College Level Examination Program (CLEP) exams are available for several general education courses through YSU's Metro College. For other courses, the student initiates an "Application for Credit by Examination" form, which requires approval by his or her advisor or Dean, the chairperson, and Dean of the school/college where the course is offered. If these approvals are granted, the student pays a fee (\$20 per credit hour) at the Bursar's Office and presents a copy of the receipt at the office of the examining department. The chairperson arranges for the examination, records the outcome on the form as "credit recommended" or "credit not recommended," and submits it to the Records Office. If successful, the name of the course is entered on the student's transcript with a grade of CR. The result of the examination does not affect the student's grade point average.

Credit by examination may be earned in most undergraduate civil engineering courses, but only in an academic semester in which the course is offered and held. It is recommended that a student contemplating a request for credit by examination discuss the matter with the instructor(s) scheduled to teach the course before proceeding. At the discretion of the instructor(s), the student will be expected to successfully complete one or more of the following:

1. a specially prepared examination given at a time agreed to by the student and the instructor(s);
2. the final examination for the course given during the final exam week; or
3. an independent project designed to demonstrate proficiency in the course work with a time limit for completion.

To allow sufficient time for the instructor(s) to prepare, administer, and grade an examination or project, the student should seek to complete the "Application for Credit by Examination", including fee payment, by no later than the end of the fourth week of the academic semester.

ENROLLMENT IN COURSES ON A CREDIT/NO CREDIT BASIS

To encourage students to explore subjects outside of their major field of concentration, a credit/no credit policy exists with certain guidelines. Youngstown State University students who have completed at least 15 semester hours of courses and have a grade point average of 2.0 or better, or transfer students admitted unconditionally who have at least 30 semester hours of transfer credit, may elect to take a course for credit (CR) or no credit (NC). This option may be elected for a maximum of 12 semester hours of courses for the baccalaureate degree or 6 semester hours of courses for the associate degree, but not more than one course per semester (including each non-overlapping summer term).

Since the intent of this option is to encourage students to experiment in areas they would otherwise be reluctant to try, only elective courses and not required courses (i.e., specific courses as listed in the recommended curricula sheets in Appendix A) are available for CE students on this enrollment basis. Courses taken under the CR/NC option may not be counted toward a student's major or minor. CE students may take only elective courses outside the College of Engineering and Technology (e.g., the General Education Knowledge domain courses) on a CR/NC basis. Students should confer with their advisor prior to electing the CR/NC option.

Students must indicate their selection of the CR/NC option at the time of registration or within the time limits established for adding classes. The CR/NC option will not be converted to the standard grading system beyond the last day to add a class. Students opting for the CR/NC option will not be identified as such on the class roster. If the student earns a grade of A, B, or C in the course, a grade of CR is recorded. Otherwise, a grade of NC is recorded. The student's GPA is not affected.

MINIMUM GRADE REQUIREMENTS FOR THE B.E. DEGREE

An overall grade point average (GPA) in all coursework of 2.0 (C average), and passing grades of D or better in all required and elective courses counted for the degree, are required for graduation. In addition, the student must maintain an unrecalculated GPA of 2.0 or better in all Civil Engineering (CEEGR) classes counted toward his or her major, and in all engineering classes combined. The unrecalculated GPA is computed by including grades received in all courses, including those that were later repeated. A disqualification policy is also in effect which will limit enrollment in CEEGR 5855, 4881, and 5837 to those students having an unrecalculated GPA of 2.0 for all CEEGR courses. Should a student be denied permission to enroll in these controlled courses due to an unacceptable academic record, continued enrollment in the program may be possible by repeating courses or, in a few instances, by enrollment in CEEGR elective courses.

It should be noted that, prior to admission to a professional program (e.g., Civil Engineering), a student who earns two unsatisfactory grades (D, F, NC) in any required course will be disqualified from further registration in Engineering courses, except by permission of the Dean of Engineering and Technology. Likewise, a student who interrupts his/her enrollment in the CE program will be subject to this rule, even though previously admitted to Civil Engineering.

REPETITION OF COURSES, PREREQUISITES, AND RECALCULATIONS OF GRADE POINT AVERAGE

A student may repeat a course once, unless an additional repetition is authorized by the Dean of Engineering and Technology. If the course is a prerequisite to another course, the repetition must be successfully completed before the subsequent course is taken. A course may not be repeated once the student has received credit for a more advanced course in the same subject. A current undergraduate student may wish to improve his/her cumulative GPA by repeating a course in which a grade of D or F was earned. In order to recalculate the cumulative point average, the repetition must be consistent with the policy on Repetition of Courses and the student must initiate the recalculation process. The grade earned in the repeated course will be used for all purposes including calculation of cumulative GPA, except where recalculation is specifically prohibited. Although courses are not deleted from the permanent record, the record is adjusted to reflect the inclusion of only the last grade in the computation of the point average. The hours credited toward the degree are those earned with the last grade. Only undergraduate students currently enrolled in the University may request recalculation. A post-baccalaureate student is not eligible to petition grades subsequent to conferral of the degree. All YSU grades will be counted in determining honors for graduation.

No student may receive credit for a course that is a prerequisite for a more advanced course which the student has already successfully completed, unless an exception to this policy is recommended by the appropriate chairpersons (major and subject matter) and approved in writing by the Dean of Engineering

and Technology. Should this policy be violated, the prerequisite course cannot be counted toward the degree requirements and, if required, must be replaced by another course approved by the CE Curriculum Committee.

COURSES TAKEN ON A TRANSIENT BASIS

Students wishing to attend another institution as transient students must complete and submit the “Transient Student Authorization” form (available from the Dean of the College in which they are enrolled). Detailed instructions are printed on the back of the form. Approval of the Department Chair and Dean is required. Credit will be granted for approved course work in which a grade of C or better is received. It is the student's responsibility to have an official transcript sent to the YSU Office of Records. Note that the last 30 semester hours applicable toward the bachelor’s degree requirements must be taken at YSU; this requirement must be considered by senior students.

GOOD STANDING, WARNING, PROBATION, AND SUSPENSION

The University has established four categories of academic standing: good standing, warning, probation, and suspension. “Warning” and “Probation” indicate that grade standards consistent with graduation requirements are not being met. “Suspension” means a period of separation from the University to permit maturation in judgment and responsibility on the part of a student, which should improve the student's capacity for academic achievement.

Recognizing that the transition from high school to college may be a difficult one, the University has set the minimum levels of academic achievement during the student's first year somewhat below what will be required in order to graduate. The point averages required for Good Standing are as follows:

Credit Hours	GPA
1-31	1.75
32+	2.00

A student who falls below the specified GPA for the number of hours passed (including transfer hours accepted) will be placed on Warning. If by the end of the following semester, the student has failed to bring the average up to the minimum, the student will be put on Probation. If at the end of the probationary semester the student has failed to bring the average up to the minimum, the student will be suspended; however, if the student makes substantial improvement during a probationary semester and averages at least 2.0 for this semester, the student will be continued on probation even though the student's cumulative GPA does not reach the minimum.

GRADUATE STUDY; ENROLLMENT FOR GRADUATE COURSES

Graduate civil engineering students who qualify academically are encouraged to consider advanced study in the graduate program leading to the Master of Science in Engineering degree. The coordinator of graduate studies in civil engineering will be pleased to discuss the details of the graduate program with interested students. Information about graduate assistantships and scholarships is also available.

Even before graduation, it is possible for seniors to obtain approval to enroll in graduate courses, thereby gaining a head start in graduate work. An undergraduate student who has senior standing and an unrecalculated cumulative grade point average of 2.7 or above, and who does not require a full schedule to complete the baccalaureate degree requirements at Youngstown State University, may enroll in 6900-level courses for graduate credit provided such enrollment does not cause the total schedule for the semester to exceed 12 semester hours. Before registering for the courses, the student must have the approval of the program coordinator in the program where the credit will be applied, the course instructor, and the Dean of Graduate Studies and Research. This approval is obtained by completing the form entitled "Application by Undergraduate to Enroll in a Graduate Course". The credit earned cannot be counted toward a graduate program at Youngstown State University until the student is admitted to the Graduate School, and the credit is accepted by the department in which the student continues graduate work. The maximum amount of such credit that will be accepted at Youngstown State University is 9 semester hours.

Permission for undergraduates to enroll in graduate courses for undergraduate credit will be granted only to students with proven exceptional academic ability. A graduate course can only be counted toward the B.E. degree as an elective if approval has been granted by the CE Curriculum Committee.

PROFESSIONAL REGISTRATION

For most practicing civil engineers, registration as a Professional Engineer (P.E.) is an important step required for advancement in their careers. Registration as a Professional Engineer is a three-step process:

1. Take and pass the eight-hour Fundamentals of Engineering (FE) exam;
2. Gain the appropriate length of applicable professional experience (for graduates of ABET accredited bachelor degree programs, this typically means four years of work under the supervision of a registered P.E.); and
3. Take and pass the eight-hour Principles and Practice exam.

Ohio law permits senior engineering students enrolled in programs accredited by ABET (including YSU's Civil Engineering program) to take the Fundamentals of Engineering exam before graduation. This exam is given at locations throughout Ohio every April and October. Qualifying seniors who will graduate before the date of the next exam are eligible to take the exam. In addition, YSU's Office of University Outreach generally offers a review course for the FE exam each year from January through April. Further details regarding professional registration or the review course may be obtained from Dr. Scott C. Martin, YSU's representative to the Ohio Board of Registration for Professional Engineers and Surveyors. All civil engineering students are strongly urged to initiate the professional registration process during their senior year.

PROFESSIONAL SOCIETIES

Civil engineering students are strongly encouraged to enhance their educational experience at YSU by participating in the activities of one or more of the following student engineering societies:

American Society of Civil Engineers (ASCE):

The YSU Student Chapter of ASCE sponsors field trips, social gatherings, seminars, conferences, engineering competitions, etc. The organization has participated in regional student chapter conferences, and steel bridge building and concrete canoe competitions, and has won several awards for its activities. Students in good academic standing are encouraged to become members of both the national ASCE (free) and the YSU Student Chapter (\$15 per year). Brochures describing the benefits of ASCE membership can be found outside the department office.

Society of Women Engineers (SWE):

Engineering has changed dramatically since 1980, when it was a predominately male profession. Now, 25% of undergraduate degrees in civil engineering are awarded to women. In recognition of the key role women now play in the engineering profession, YSU established a SWE student group in 2000. Membership is open to all male or female students in good academic standing in any engineering discipline.

Order of the Engineer:

Engineering students are encouraged to join the Order of the Engineer to demonstrate their commitment to upholding the highest professional and ethical standards in the practice of engineering. To do so, students participate in a ring ceremony held each spring in the College of Engineering and Technology.

HONORARY SOCIETIES

Outstanding civil engineering students may be invited to join campus chapters of the following honorary societies:

- | | | |
|---------------|---|---------------------------------------|
| Tau Beta Pi | - | National engineering honorary society |
| Phi Kappa Phi | - | Honorary society for all disciplines |

APPENDIX A

Recommended Curriculum

Course Prerequisites

Civil Engineering Program

2006-07

Civil Engineering Program 2006 - 2007

First Year

Fall Semester			Spring Semester		
ENGL 1550	Writing 1	3 ()	ENGL 1551	Writing 2	3 ()
CHEM 1515 ¹	General Chemistry 1	4 ()	ENGR 1560	Engineering Computing	3 ()
CHEM 1515L	General Chemistry 1 Lab	0 ()	MATH 1572 ³	Calculus 2	4 ()
ENGR 1550	Engineering Concepts	3 ()	GER Elective	Artistic & Literary Perspect.	3 ()
MATH 1571 ²	Calculus 1	4 ()	COMST 1545	Comm. Theory & Practice	3 ()
GER Elective	Societies & Institutions	3 ()			<u>16</u>
		<u>17</u>			

Second Year

Fall Semester			Spring Semester		
MATH 2673	Calculus 3	4 ()	MATH 3705	Differential Equations	3 ()
CEEGR 2610	Surveying	3 ()	CEEGR 2602	Strength of Materials	3 ()
CEEGR 2610L	Surveying Lab	1 ()	CEEGR 2602L	Strength of Materials Lab	1 ()
CEEGR 2601	Statics	3 ()	GEOL 2611 ⁴	Geology for Engineers	3 ()
PHYS 2610 ¹	General Physics 1	4 ()	GER Elective	Personal & Social Respon.	3 ()
		<u>15</u>	CHEM 1516/1516L or PHYS 2611		<u>4 ()</u>
					<u>17</u>

Third Year

Fall Semester			Spring Semester		
CEEGR 3720	Transportation Engineering	3 ()	CEEGR 3717	Hydraulic Design	4 ()
CEEGR 3716	Fluid Mechanics	3 ()	CEEGR 4881	Geotechnical Engineering	3 ()
CEEGR 3716L	Fluid Mechanics Lab	1 ()	CEEGR 4881L	Geotechnical Lab	1 ()
CEEGR 3749	Structural Analysis 1	3 ()	CEEGR	Design Elective	3 ()
CEEGR 3749L	Structural Analysis 1 Lab	1 ()	ISEGR 3710	Engineering Statistics	3 ()
CEEGR 3736	Fund. of Environ. Engr.	3 ()	GER Elective	Societies & Institutions	3 ()
GER Elective	Personal & Social Respon.	3 ()			<u>17</u>
		<u>17</u>			

Fourth Year

Fall Semester			Spring Semester		
CEEGR 5855	Reinforced Concrete Design	3 ()	CEEGR 4863	Integrated Design Project	3 ()
CEEGR 5856	Steel Design	3 ()	F.E. Elective	See Note Below	3 ()
CEEGR	Elective	3 ()	CEEGR ⁵	Elective	3 ()
ISEGR 3724	Engineering Economy	3 ()	MECH 2641	Dynamics	3 ()
CEEGR 5877	Systems Eng. & Project Mgt.	3 ()	GER Elective	Art./Lit. or Soc./Inst.	3 ()
GER Elective	Artistic & Literary Perspect.	3 ()			<u>15</u>
		<u>18</u>			

- 1 - GER Natural Science Requirement
- 2 - GER Mathematics Requirement
- 3 - GER Selected Topics & Electives
- 4 - May substitute CHEM 1516/1516L or PHYS 2611
- 5 - May substitute out of Department course with approval of CE Program Coordinator

Fundamentals of Engineering (F.E.) Elective - Choose One:
 MECH 2606 (Engineering Materials); or
 MECH 2603 (Thermodynamics 1); or
 ECEGR 2632 (Basic Circuit Theory 1)

CEEGR CURRICULUM PREREQUISITES

COURSE	----	PREREQUISITE(S)
ENGR 1550	----	Eligible to take MATH 1513 or higher level math course
ENGR 1560	----	ENGR 1550, MATH 1570 or concurrent, high school drawing or ENGR 1560L (ENGR 1560L may be taken concurrently)
ENGL 1551	----	ENGL 1550 or Composition & Reading Test results
MATH 1571	----	4 units H.S. math (including trigonometry) and at least Level 7 on Math Placement Test or MATH 1513
MATH 1572	----	MATH 1571
MATH 2673	----	MATH 1572
MATH 3705	----	MATH 2673
CHEM 1515	----	3 units H.S. algebra and geometry (or MATH 1503 and 1511 or their equivalent) and 1 unit H.S. chemistry. Concurrent for CHEM 1515: CHEM 1515R unless exempted by placement exam
CHEM 1515L	----	Concurrent with CHEM 1515
CHEM 1516	----	Concurrent with CHEM 1516: CHEM 1516R unless a grade of C or better was earned in CHEM 1515
CHEM 1516L	----	Concurrent with CHEM 1516
PHYS 2610	----	H.S. physics or PHYS 1501, MATH 1571 or concurrent
PHYS 2611	----	PHYS 2610, MATH 1572 or concurrent
ECEGR 2632	----	MATH 1572 or concurrent
ISEGR 3710	----	MATH 1571
ISEGR 3724	----	MATH 1571, ENGR 1560
MECH 2603	----	MATH 1572
MECH 2606	----	MATH 1572
CEEGR 2601	----	MATH 1572 and PHYS 2610 or concurrent
CEEGR 2602	----	CEEGR 2601
CEEGR 2602L	----	Concurrent with CEEGR 2602
CEEGR 2610	----	MATH 1504 or equivalent
CEEGR 2610L	----	Concurrent with CEEGR 2610
CEEGR 3711	----	Junior standing or consent of instructor
CEEGR 3716	----	CEEGR 2602
CEEGR 3716L	----	Concurrent with CEEGR 3716, ENGR 1560 or equivalent
CEEGR 3717	----	CEEGR 2610 and CEEGR 3716
CEEGR 3720	----	CEEGR 2610
CEEGR 3736	----	CHEM 1515 and ENGR 1560
CEEGR 3749	----	CEEGR 2602
CEEGR 3749L	----	CEEGR 2602; concurrent with CEEGR 3749
CEEGR 3751	----	CHEM 1515
CEEGR 3751L	----	Concurrent with CEEGR 3751, CHEM 1515
CEEGR 4800	----	Senior standing or consent of instructor
CEEGR 4812	----	Senior standing or consent of instructor
CEEGR 4835	----	CEEGR 3720
CEEGR 5849	----	CEEGR 3749
CEEGR 4863	----	Senior standing
CEEGR 4879	----	CEEGR 3749
CEEGR 4881	----	MATH 2673, CEEGR 3749, and an unrecalculated GPA of 2.0 or better for all CEEGR courses
CEEGR 4881L	----	Concurrent with CEEGR 4881
CEEGR 5820	----	CEEGR 3720 and CEEGR 4881
CEEGR 5837	----	CEEGR 3736 and an unrecalculated GPA of 2.0 or better for all CEEGR courses
CEEGR 5829	----	CEEGR 3749 or consent of instructor
CEEGR 5855	----	CEEGR 3749 and an unrecalculated GPA of 2.0 or better for all CEEGR courses
CEEGR 5856	----	CEEGR 3749
CEEGR 5877	----	MATH 3705
CEEGR 5882	----	CEEGR 4881 and CEEGR 5855
CEEGR 5884	----	CEEGR 3736

Tentative CEEGR Elective Offerings, 2006-07 through 2009-10

<u>Fall, 2006</u> CEEGR 4800 – Special Topics (GIS and Hydraulic Design)	<u>Spring, 2007</u> CEEGR 4835 – Highway Design (D) CEEGR 5837 – Environmental Engineering Design (D)	<u>Summer, 2007</u> CEEGR 5884 – Solid & Hazardous Waste Management
<u>Fall, 2007</u> CEEGR 5820 – Pavement Materials & Design (D) CEEGR 5882 – Foundation Eng.	<u>Spring, 2008</u> CEEGR 4849 – Structural Analysis 2 CEEGR 3751 – Water Quality Analysis	
<u>Fall, 2008</u> CEEGR 4835 – Highway Design (D)	<u>Spring, 2009</u> CEEGR 5837 – Environmental Engineering Design (D) CEEGR 5882 – Foundation Eng.	<u>Summer, 2009</u> CEEGR 5884 – Solid & Hazardous Waste Management
<u>Fall, 2009</u> CEEGR 5820 – Pavement Materials & Design (D)	<u>Spring, 2010</u> CEEGR 4849 – Structural Analysis 2 CEEGR 3751 – Water Quality Analysis	

D – CE Design Elective

APPENDIX B

*Certification of Graduation
(Senior Sheet)*

Petition to Curriculum Committee Form

Plan of Courses for Graduation Form

Civil Engineering Program

2006-2007

CERTIFICATION OF GRADUATION: Bachelor of Engineering
CIVIL ENGINEERING PROGRAM
Bulletin/Catalog Year 2006-07

Student
:

Patron No.:

Entering Date:

Dept.	Catalog Number	ES ED*	SH	Grade	Dept.	Catalog Number	ES ED*	SH	Grade	Dept.	Catalog Number	ES ED*	SH	Grade
MAJOR: CIVIL ENG. (45 SH)					ENGR. FUNDAMENTALS (9 SH)					BASIC SCIENCE (15 SH)				
CEEGR	2601	S	3		ECEGR	2632	S	3		<i>CHEM</i>	<i>1515</i>		4	
CEEGR	2602	S	3		ISEGR	3724	S	3		<i>PHYS</i>	<i>2610</i>		4	
CEEGR	2602L	S	1		MECH	2603	S	3		<i>GEOL</i>	<i>2611</i>		3	
CEEGR	2610	S	3		MECH	2606	S	3		Choose either Chem 1516 or Phys 2611				
CEEGR	2610L	S	1		MECH	2641	S	3		<i>CHEM</i>	<i>1516</i>		4	
CEEGR	3716	S/D	3							<i>PHYS</i>	<i>2611</i>		4	
CEEGR	3716L	S	1							GENERAL EDUCATION (21 SH)				
CEEGR	3717	S/D	4		MATHEMATICS (18 SH)					Pers. & Soc. Resp. (6 SH):				
CEEGR	3720	S/D	3		<i>MATH</i>	<i>1571</i>		4						
CEEGR	3736	S/D	3		<i>MATH</i>	<i>1572</i>		4						
CEEGR	3749	S	3		<i>MATH</i>	<i>2673</i>		4		Soc. & Inst. (6 or 9 SH):				
CEEGR	3749L	S	1		<i>MATH</i>	<i>3705</i>		3						
CEEGR	5855	D	3		ISEGR	3710		3						
CEEGR	5856	D	3											
CEEGR	4863	D	3		COMMUNICATION (9 SH)					Art. & Lit. Persp. (6 or 9 SH):				
CEEGR	4881	S/D	3		<i>ENGL</i>	<i>1550</i>		3						
CEEGR	4881L	S	1		<i>ENGL</i>	<i>1551</i>		3						
CEEGR	5877	S	3		<i>COMST</i>	<i>1545</i>		3						
CEEGR Electives (9 SH)										REQUIREMENT SUMMARY				
					EXTRA COURSES					Mathematics	18	✓		
										Basic Science	15	✓		
										Engineering Topics	69	✓		
										General Education	30	✓		
OUT-OF-DEPT. ENGR. (6 SH)										GRADUATION REQUIREMENTS				
ENGR	1550	S	3		GRADUATION CERTIFICATION					Transfer SH	0.00			
ENGR	1560	S	3							YSU SH Passed	0.00			
										Combined Credits	0.00			
										Total SH for Degree	132.00			
										YSU SH Attempted	0.00			
										YSU Quality Points	0.00			
					Advisor				Date	Overall GPA				
										CEEGR Unrecalc. GPA		✓		
										Engr. Unrecalc. GPA		✓		
					Chair				Date					

* S = Engineering Science
D = Engineering Design
S/D = Engineering Science & Design

Note: Courses shown in italics contribute to the University's General Education Requirements.

Petition to Civil Engineering Curriculum Committee

TO: Civil Engineering Curriculum Committee

FROM: _____

ADVISOR: _____

This is to request your recommendation for approval of the following courses:

Dept.	Catalog No.	Grade	Hours	TO BE USED FOR	
				Dept.	Catalog No.
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

Conformance to ABET Criteria: Yes No N/A

Reason for request:

ADVISOR

Recommended for approval _____ Date _____

NOT Recommended for approval _____ Date _____

CURRICULUM COMMITTEE

Accepted _____ Date _____

NOT Accepted _____ Date _____

Orig: Student file
cc: Advisor
Coordinator, Civil Engineering Program



PLAN OF COURSES FOR GRADUATION

Program (circle one): Chemical Engr. Civil Engr.	
Student Name:	Proposed Graduation Date (Semester/Year):
Home Phone:	Work Phone:

Student's Proposed Course Schedule:

SEMESTER: YEAR:	SEMESTER: YEAR:	SEMESTER: YEAR:	SEMESTER: YEAR:

Date Form Completed By Student: _____

APPENDIX C

Civil Engineering Program

Faculty and Staff

FULL-TIME FACULTY

Office/Phone/E-mail

SCOTT C. MARTIN, Chair/Program Coordinator
Professor of Civil Engineering
B.S., M.S., Ph.D., Clarkson University 1977, 1979, 1984
P.E. - Ohio
Specialty: Environmental Engineering

Moser Hall, Room 2445
(330)941-3026
scmartin@ysu.edu

JAVED ALAM
Professor of Civil Engineering
B.Tech.C.E., Indian Institute of Technology, 1977
M.Engr., Asian Institute of Technology, 1970
Ph.D., Case Western University, 1982
Specialty: Structural Mechanics

Moser Hall, Room 2413
(330)941-3029
jalam@ysu.edu

SHAKIR HUSAIN
Professor of Civil Engineering
B.Sc., M.Sc., The Aligarh Muslim Univ., 1974, 1976
M.S., Ph.D., University of Mississippi, 1984, 1987
P.E. - Ohio
Specialty: Transportation & Construction

Moser Hall, Room 2465
(330)941-1742
shusain@ysu.edu

ANWARUL ISLAM
Assistant Professor of Civil Engineering
B.S., Bangladesh Univ. of Engineering and Tech., 1992
M.S., Ph.D., Florida State University, 2000, 2005
P.E. – Florida, Ohio
Specialty: Structural Design

Moser Hall, Room 2430
(330)941-1740
aaislam@ysu.edu

IRFAN A. KHAN
Professor of Civil Engineering
B.Sc., Univ. of Engineering & Technology, 1967
M.S., University of Hawaii, 1974
Ph.D., Colorado State University, 1977
P.E. - Ohio
Specialty: Water Resources & Hydrology

Moser Hall, Room 2415
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EMERITUS FACULTY

Office/Phone/E-mail

JACK D. BAKOS, JR.
Professor/Chair Emeritus of Civil Engineering
B.S.C.E., University of Akron, 1963
M.S.C.E., Ph.D., West Virginia Univ., 1965, 1967
P.E. - Ohio, Mississippi
Specialty: Structural Design

Moser Hall, Room 2420
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jdbakos@cc.ysu.edu

JOHN N. CERNICA
Professor Emeritus of Civil Engineering
B.E., Youngstown State University, 1954
M.S., Ph.D., Carnegie-Mellon University, 1955, 1957
P.E. - Ohio, Pennsylvania, New York, Florida
Specialty: Soil Mechanics & Foundations

JOHN F. RITTER
Professor Emeritus of Civil Engineering
B.E., Youngstown State University, 1962
M.S., Carnegie-Mellon University, 1964
P.E. - Ohio, New York
Specialty: Surveying and Structural Design

Moser, Room 2440
(330)941-1743

STAFF

LINDA J. ADOVASIO
Department Secretary

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ljadovasio@ysu.edu

GRADUATE ASSISTANTS' OFFICE

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