

*University of Rhode Island*

**DEPARTMENT OF CIVIL AND  
ENVIRONMENTAL ENGINEERING**

COLLEGE OF ENGINEERING

# ***STUDENT HANDBOOK***



Fall 2006

**WELCOME**  
**TO**  
**THE DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING**  
**AT**  
**THE UNIVERSITY OF RHODE ISLAND!**

We are privileged to have you as a *member* of the Department of Civil and Environmental Engineering at the University of Rhode Island, and we look forward to serving you. The Civil Engineering faculty is dedicated to promoting both personal and professional development in the training and education of our students. Our primary purpose is to prepare you to enter the Civil Engineering profession and to pursue advanced studies at the graduate level, should you decide to do so, by providing you with the proper tools and career direction. The Civil Engineering faculty makes it a point to get to know our students and to work closely with them on an individual basis to promote excellence in their education and professional development. We enjoy the personal interactions we have with our students and are very much interested in each one of you as individuals.

As new Civil Engineers, *you will represent the future of the profession*. Each year, our graduates enter into competitive positions in the engineering marketplace across the United States and around the globe. Many of our former students keep in touch after graduating, informing us of their continued professional progress and personal triumphs. We personally find it very rewarding to see the talented students that we have trained go on to develop successful professional careers as practicing engineers and/or pursue advanced engineering studies at the graduate level. *The exceptional quality of our graduates is a true measure of our success*. We are *very* pleased that you have chosen to be a part of our programs and the Civil Engineering profession and we look forward to getting to know you.

***Welcome!***

K. Wayne Lee, Ph.D., P.E.  
Professor and Chair  
Department of Civil and Environmental Engineering

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## I. CIVIL ENGINEERING - A PEOPLE SERVING PROFESSION

As we enter the new millennium, over 6 billion additional people will populate the earth - a number roughly equal to three times the world's total population in 1940. This growth creates demands on energy producing, food supplying, land stabilizing, water preserving, transportation providing, materials handling, waste disposing, earth moving, health caring, environmental cleansing, living, working and structural facilities on an unprecedented scale.

Accomplishing this will require - as it always has - *Civil Engineers*. The Civil Engineer builds to advance civilization and make possible the higher standards of living that lie ahead. As the technological revolution expands, as the world's population continues to grow, as environmental concerns mount, as we look forward to space habitation, the skills of Civil Engineers will be in greater demand than ever. The next few decades will be among the most creative, demanding and rewarding of all times for Civil Engineers.

Those who enter Civil Engineering today can look forward to one of the most rewarding careers ever open to men and women - rewarding in personal fulfillment, in enduring service to mankind and in financial reward. One of the great rewards of Civil Engineering is the personal satisfaction derived from the creation of enduring construction to make our communities better places in which to live and work.

As a Civil Engineer, *you* plan, design and supervise the construction of facilities essential to modern life in both the public and private sectors - facilities that vary widely in nature, size and scope: space satellites and launching facilities, offshore structures, bridges, buildings, tunnels, highways, transportation systems, dams, airports, irrigation projects, treatment and distribution facilities for water and collection, and treatment facilities for waste water.

*You* will be in the forefront of high technology's newest applications. Civil Engineers are leading users of today's sophisticated high technology. They employ the latest concepts in computer-aided design (CAD) during design, construction, project scheduling and cost control.

*You* will be involved in community development and improvement. Civil Engineers are *problem solvers*, meeting the challenges of pollution, the deteriorating infrastructure, traffic congestion, energy needs, floods, earthquakes, urban redevelopment and community planning.

*You* will be a doer. *You* will be responsible for improving the quality of life in these areas and many more. Service to the community, its development and improvement, is basically what Civil Engineering is all about. And the opportunity for creativity is unlimited as each end product is custom designed.

In addition to facility design and construction, *you* will also have options to teach in accredited engineering schools and to participate in research to improve basic knowledge that can be incorporated into the planning, design and construction process.

As you develop your skills, *you* will have the opportunity to move into the area of engineering management, overseeing the completion of entire projects. *You* will work with architects, owners, contractors, city councils, planning commissions, government officials and others involved in the many aspects of construction.

Civil Engineering is the broadest of the engineering disciplines, extending across many technical specialties, specialties which are not independent but which interact with each other. Whatever your areas of involvement - design, construction, research, teaching, management - Civil Engineering offers you a wide range of career choices for your future, both in type of work and in technical specialties.

(text excerpted from "Is Civil Engineering for You?", ASCE)

## II. DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

### A. GENERAL INFORMATION

This handbook has been prepared to provide you with a source of important information regarding the Department of Civil and Environmental Engineering procedures and requirements. The material contained herein is a supplement to the *University Undergraduate Catalog* and other information distributed to students by the University of Rhode Island. This handbook is a primary source of information for undergraduate Civil Engineering students and provides a number of forms and tables, which will be very useful to you during your studies. In addition to becoming familiar with the contents of this handbook, you should also carefully review the *University Undergraduate Catalog* since it pertains to overall university requirements and specific requirements of departmental courses. This handbook is organized into four main sections:

- College of Engineering (COE) Information
- Civil and Environmental Engineering (CVE) Department Information
- Specific Procedures and Forms
- General Student Information

Now that you are a part of the Civil and Environmental Engineering Department, you will be assigned a member of the Civil and Environmental Engineering faculty who will serve as your academic advisor. This individual will be your advisor during the remainder of your time in the Civil and Environmental Engineering Department at the URI. Make it a point to see your advisor *as soon as possible* so you can get to know him/her, and so that you can get acquainted with the Civil and Environmental Engineering Department. It is important that *you* introduce yourself, and that you maintain close contact with your advisor for course planning, professional direction, and general questions during the course of your studies. As a *minimum*, you should see your advisor *at least twice during each semester*, especially regarding course registration for *each* semester. Below is a list of academic advisors according to class year (also see page 22 for contact information office for CVE advisors). If you are unsure of whom your advisor is, please check with the department secretary in Room 203, Bliss Hall (401-874-2692).

**Table 1. CVE Academic Advisors**

<b>CLASS YEAR</b>	<b>FACULTY ADVISOR</b>
<b>2005</b>	<b>Prof. Karamanlidis</b>
<b>2006</b>	<b>Prof. Tsiatas</b>
<b>2007</b>	<b>Prof. Hunter</b>
<b>2008</b>	<b>Prof. Thiem</b>
<b>2009</b>	<b>Prof. Baxter</b>
<b>2010</b>	<b>Prof. Thomas</b>
<b>2011</b>	<b>Prof. Gindy</b>

*(Faculty and Staff Directory Information is on page 22)*

You should take special note of the Civil Engineering course requirements, which are given on page 9, and also the course checklist on page 14. The checklist is the same one that is maintained in the Dean of Engineering's office (first floor of Bliss Hall) for each Civil Engineering student to ensure that all graduation requirements have been met. It is highly recommended that you keep your *own updated* checklist (page 14) as a guide by using the information on pages 9 and 10, and that you bring it with you whenever you meet with your advisor. In addition, a useful figure has also been provided on page 10, which indicates the critical paths for required courses. You should carefully examine this table **and** the requirements as listed in the *University Catalog so that you are following proper course sequencing*.

If for some reason you cannot meet the specific requirements for graduation, there is a petition process available through the Dean of Engineering's office. *Note, however, deviations from the published coursework requirements are only approved in very special cases or unusual circumstances.* Every effort must be made to follow the prescribed plan of study for the Civil and Environmental Engineering curriculum. **At least one full semester prior to graduation**, you are **required** to complete an *Intent to Graduate* form and make an appointment with the Assistant Dean of Engineering to review your academic status.

It is very important for you to relate to the Civil Engineering profession through extra curricular activities including participation in student engineering organizations (such as: ASCE - American Society of Civil Engineers; AGC - Association of General Contractors; NSBE - National Society of Black Engineers; SNAGS - Student Chapter of the North American Geosynthetics Society; SWE - Society of Women Engineers), local, regional and national professional meetings, honor societies (such as: Chi Epsilon, Tau Beta Pi, Phi Kappa Phi), etc. Your participation and involvement in these important activities will provide you with valuable personal and professional associations, as well as social affiliations. Participation in leadership roles of these activities will provide you with a valuable experience, and represents an important addition to your resume that impresses future potential employers. Information on these opportunities is available beginning on page 16 and through notices routinely posted throughout the year in Bliss Hall.

Finally, you need to *periodically* check the glass covered department display case located on the second floor of Bliss Hall across from the central staircase entrance. This area is used for posting important announcements and messages of interest to our students on a weekly basis. If you have any questions or would just like to chat concerning your future as a Civil Engineer, please stop by my office - the door is always open. Good luck as you move into Civil Engineering, *A People Serving Profession*, and prepare to begin your exciting career in *one of the most rewarding and challenging professions!*

## **B. DEPARTMENT MISSION STATEMENT**

*Consistent with the missions of the University of Rhode Island (URI) and The College of Engineering (COE), the Department of Civil and Environmental Engineering (CVE) seeks to: prepare students to practice professionally in the national and international marketplace in the field of Civil and Environmental Engineering through the provision of high quality undergraduate and graduate educational programs; provide an environment that encourages and supports faculty career development and professional/community service; and maintain a nationally recognized research program.*

## C. DEGREES OFFERED

### 1. Undergraduate degrees

- *BSCE (Bachelor of Science Degree in Civil Engineering):* The CVE Department offers a curriculum leading to the BSCE degree. The degree requirements are designed to be completed in *four* years and currently require 129 credit hours.
- *BSCE and BA - International Engineering Program (IEP) Dual-Degree Program:* The CVE Department offers a curriculum leading to a dual-degree (BSCE and BA) through the IEP. A 6-12 month internship in a foreign country (Germany, France, Spain, Mexico, Portugal, or Brazil) is also part of the program. The degree requirements are designed to be completed in *five* years. Required credit hours vary somewhat with the specific curriculum track selected. *See page xx for more details and additional information.*

### 2. Graduate degrees

- *Master of Science in Civil and Environmental Engineering (MSCE):* The CVE Department offers the MSCE degree in Civil and Environmental Engineering. The program requires 32 credit hours and offers a thesis or non-thesis option.
- *MSCE and Engineering Diplom - International Engineering Program (IEP) Dual-Degree Program:* The CVE Department offers a dual-degree program with the Technical Universitat of Braunschweig (TUB), Germany. Students earn an MSCE from URI and the Engineering Diplom from TUB. Coursework is taken at URI and TUB to complete program requirements. A thesis and a special problems paper are required. *Contact the CVE department for more details and additional information.*
- *Doctor of Philosophy in Civil and Environmental Engineering (PhD):* The CVE Department offers the PhD degree in Civil and Environmental Engineering. The program requires a minimum of 44 credit hours beyond the MSCE degree, and a dissertation.

*This Handbook only contains information for the **undergraduate** degree programs in Civil Engineering. Consult the University Catalog and the CVE Department for more information about the graduate programs.*

### III. BACHELOR OF SCIENCE PROGRAM IN CIVIL ENGINEERING

#### A. PROGRAM MISSION STATEMENT

*Consistent with the mission of the Department of Civil and Environmental Engineering, the Bachelor of Science program in Civil and Environmental Engineering will prepare graduates for successful careers and advanced studies at the graduate level based upon a solid foundation of technical ability, high standards of professional ethics, and strong communications skills.*

#### B. PROGRAM EDUCATIONAL OBJECTIVES

The BSCE Program at URI has four primary objectives:

- (1) Produce graduates who are able to successfully practice civil engineering to serve local, state, regional, national and international industries, and government agencies.
- (2) Produce graduates with the necessary background and technical skills to work professionally in one or more of the following areas: environmental engineering, geotechnical engineering, structural engineering, transportation engineering, water resources engineering.
- (3) Prepare graduates for personal and professional success with awareness of and commitment to their ethical and social responsibilities, and diversity, both as individuals and in team environments.
- (4) Prepare graduates to be interested in, motivated for, and capable of pursuing continued lifelong learning through further graduate education, or other training programs in engineering or related fields.

#### C. Program Educational Outcomes

*GRADUATES FROM THE BSCE PROGRAM IN CIVIL ENGINEERING WILL HAVE:*

- An appropriate fundamental understanding of mathematics, physics, chemistry, geology, and other basic sciences.
- Basic computer skills consistent with applications to Civil Engineering problem solving.
- Basic engineering knowledge across a range of subjects including mechanics, mechanics of materials, engineering construction materials, statics, dynamics, fluid mechanics, and CADD.
- An understanding of basic economics, together with approaches to economics based decision-making.
- A working knowledge of probability and statistics as applied to civil engineering problems.
- Basic technical proficiency in at least four of the recognized civil engineering focus areas.
- An understanding of the intradisciplinary approach in Civil Engineering problem solving and design at the design project level through a capstone design project experience.

- Experience with individual and team based approaches to civil engineering problem solving in the classroom, laboratory, and through an integrated capstone design project experience.
- Practical and hands-on laboratory experience solving Civil Engineering problems involving measuring physical phenomena and interpreting results.
- An understanding of ethics of engineering activities, professional standards and responsibilities, the relationships between engineering and society in general, and the necessity for life-long learning.
- Well-developed written communication skills, and experience with oral communications both individually and on teams.
- A broad understanding and global perspective of society in general by exposure to fine arts, literature, letters, foreign language or culture, social science, and English communication.
- An opportunity to: obtain membership and become active in the student chapter of the ASCE; develop teamwork and leadership skills; participate in service activities related to the local community and the civil engineering professional society.

## D. DEGREE REQUIREMENTS

### 1. University General Education Requirements

*Note: Beginning in January, 1996, all new freshmen and transfer students with less than 24 credits are required to take EGR 105 in their first semester.*

*All students in Civil Engineering must satisfy the University General Education requirements as follows:*

- **Mathematics (M) - 3 credits:** This is satisfied by required courses.
- **Natural Sciences (N) - 6 credits:** This is satisfied by required courses.
- **English Communications (C, CW) - 6 credits:** For Civil and Environmental Engineering, the required 3-credit course is *either* COM 101 **or** WRT 101. Select the other 3-credit course from those listed in the *University Catalog*.
- **Foreign Language and Culture (F) - 3 credits:** Select from courses listed in the *University Catalog*.
- **Fine Arts and Literature (A) - 6 credits:** Select from courses listed in the *University Catalog*.
- **Social Sciences (S) - 6 credits:** Three credits of Social Science are satisfied by the required course ECN 201. Select the other 3-credit course from those listed in the *University Catalog*.
- **Letters (L) - 6 credits:** Select from courses listed in the *University Catalog*.

### 2. CVE CURRICULUM

The table on page 10 shows the Civil and Environmental Engineering course requirements. The sequence of courses is shown for the *entire* four-year curriculum, which currently requires 129 credits of coursework. A useful course-tracking sheet (the same one used by the COE Dean's office) is given on page 14. *You should become familiar with these tables and use them to schedule your courses for each semester.*

Civil Engineering professional elective courses include: CVE 334, 391, 442, 443, 450, 453, 460, 470, 471, 472, 474, 475, 478, 491, 492, 495. In addition, 500-level Civil Engineering courses may also be taken by qualified seniors and honors students by permission.

### 3. COURSE CRITICAL PATHS

The table on page 12 shows the critical paths for Civil and Environmental Engineering courses that you will be taking. Course prerequisites and the sequence of courses are shown for you. This is a useful guide to help you follow required courses in the proper sequence, and you should consult it regularly as you register each semester.

**University of Rhode Island**

**Civil and Environmental Engineering Course Requirements  
(129 Credit Hours)**

<b><i>Freshman Year, First Semester: 16 cr.</i></b>	<b><i>Freshman Year, Second Semester: 16 cr.</i></b>
3 CHM 101 General Chemistry 1 CHM 102 Chemistry Laboratory 1 EGR 105 Foundations of Engineering I 4 MTH 141 Introductory Calculus 3 PHY 203 Elementary Physics I 1 PHY 273 Physics Laboratory I 3 General Education Elective (COM 101 or WRT 101)	3 ECN 201 Prin. of Econ. - Microecon. (S) 2 EGR 106 Foundations of Engineering II 4 MTH 142 Intermediate Calculus 3 PHY 204 Elementary Physics II 1 PHY 274 Physics Laboratory II 3 General Education Elective
<b><i>Sophomore Year, First Semester: 15 cr.</i></b>	<b><i>Sophomore Year, Second Semester: 17 cr.</i></b>
3 CVE 250 CADD for Civil Engineers 2 CVE 240 Geomatics 1 CVE 241 Geomatics Laboratory 3 MCE 262 Statics 3 MTH 243 Calculus and Analytic Geometry 3 General Education Elective	3 CVE 220 Mechanics of Materials 1 CVE 221 Mechanics of Materials Lab. 4 GEO 103 Geological Earth Science 3 MCE 263 Dynamics 3 MTH 244 Differential Equations 3 General Education Elective
<b><i>Junior Year, First Semester: 18 cr.</i></b>	<b><i>Junior Year, Second Semester: 17 cr.</i></b>
3 CVE 346 Transportation Engineering 3 CVE 354 Structural Engineering 1 CVE 355 Structural Engineering Lab. 3 CVE 374 Environmental Engineering 1 CVE 375 Environmental Engineering Lab. 3 CVE 381 Geotechnical Engineering 1 CVE 382 Geotechnical Engineering Lab. 3 MCE 354 Fluid Mechanics	3 CVE 347 Highway Engineering 1 CVE 348 Highway Engineering Lab. 3 CVE 370 Hydraulic Engineering 1 CVE 371 Hydraulic Engineering Lab. 3 STA 409 Statistics 3 Professional Elective <sup>a</sup> 3 General Education Elective
<b><i>Senior Year, First Semester: 15 cr.</i></b>	<b><i>Senior Year, Second Semester: 15 cr.</i></b>
3 CVE 465 Analysis and Des. of Concr. Struct. 1 CVE 466 Structural Concrete Lab. 2 CVE 497 Civil Engineering Design I 3 Professional Elective <sup>a</sup> 6 General Education Elective	3 CVE 483 Foundation Engineering 3 CVE 498 Civil Engineering Design II 3 Professional Elective <sup>a</sup> 3 Free Elective <sup>b</sup> 3 General Education Elective

<sup>a</sup> Three of the *nine* credits of Professional Electives **must** be selected from the following courses: CVE 470, 471, 475, 478. The remaining *six* credits are to be selected from the list in the CVE Undergraduate Student Handbook.

<sup>b</sup> Recommended that students select from the CVE Professional Elective courses to satisfy this requirement (see CVE Undergraduate Student Handbook).

**TABLE - CVE COURSE CRITICAL PATHS (p. 11)**

[Critical Paths \(link to Excel\)](#)

#### IV. PROCEDURES FOR SPECIAL PROBLEMS COURSES (CVE 491; CVE 492)

**Note: The form for requesting a special problems course is given on page 13.**

1. *Special Problems* courses provide the opportunity to conduct advanced work on a special subject not offered in formal course work. The student selects the particular subject area in consultation with a supervising faculty member (see item 5 below). Such work involves a special initiative and responsibility on the part of the student and requires guided, independent study.
2. *Special Problems* courses require course registration the same as regular courses.
3. *Only junior and senior students with a minimum GPA of 2.75 are permitted to enroll in a Special Problems course.*
4. Prior to registering for a *Special Problems* course, the student must have submitted *in writing* a brief (100-200 word) description of the course, including a statement of the objective(s), procedures to be followed, and the intended final product.
5. *Special Problems* courses require that a *specific* faculty member accept the responsibility for supervision of the coursework prior to a student registering for the course. This faculty member is responsible for approval of the student's *Special Problems* course plan, monitoring of student progress, providing advice and guidance, and assigning the final grade at course completion.
6. *Special Problems* courses require the approval of the student's advisor **and** the Department of Civil and Environmental Engineering Chair **prior to registration** for the *Special Problems* course.
7. **Written approval** of the *Special Problem* course on the appropriate form shall be filed in the Department of Civil and Environmental Engineering and with the student's advisor.
8. **Any student not properly enrolled will be dropped from the *Special Problems* course.**

# ***CIVIL AND ENVIRONMENTAL ENGINEERING***

## **Special Problems Course Request CVE 491; CVE 492**

**NAME OF STUDENT:** \_\_\_\_\_

**COURSE NUMBER:** \_\_\_\_\_

**SEMESTER TAKEN:** \_\_\_\_\_

**PROBLEM TITLE:** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Problem Description (including objective(s), procedures, intended final product):** \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**FACULTY ADVISOR FOR COURSE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**ADVISOR APPROVAL:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

**CHAIR'S APPROVAL:** \_\_\_\_\_ **DATE:** \_\_\_\_\_

NAME: \_\_\_\_\_

**CIVIL AND ENVIRONMENTAL ENGINEERING: CLASS OF 129 CREDITS**

REQUIRED COURSES: 99 CREDITS					General Education Courses: 30 Credits				
COURSE	CR	GRADE	SEM/YR	TRANS	COURSE	DIVISION	CR	SEM/YR	TRANS
CVE 220	3				(A)	Fine Arts and Literature (6)			
CVE 221	1						3		
CVE 240	2						3		
CVE 241	1				(ECW)	English Communications (6)			
CVE 250	3								
CVE 346	3				COM 100	Communication Fundamentals	3		
CVE 347	3				or	or			
CVE 348	3				WRT 104	Writing to Inform and Explain			
CVE 354	3								
CVE 355	1				(F)	Foreign Language/Culture (3)			
CVE 370	3						3		
CVE 371	1				(L)	Letters (6)			
CVE 374	3						3		
CVE 375	1						3		
CVE 381	3				(S)	Social Sciences (6)			
CVE 382	1				ECN 201	Microeconomics	3		
CVE 465	3						3		
CVE 466	1				<b>FREE ELECTIVE - 3 CR.</b>				
CVE 483	3						3		
CVE 497	2				<b>ADDITIONAL CLASSES</b>				
CVE 498	3								
CHM 101	3								
CHM 102	1								
EGR 105	1					NR 's			
EGR 106	2								
GEO 103	4								
MCE 262	3								
MCE 263	3								
MCE 354	3				<b>FAILURES</b>				
MTH 141	4								
MTH 142	4								
MTH 243	3								
MTH 244	3				<b>NOTES</b>				
PHY 203	3								
PHY 273	1								
PHY 204	3								
PHY 274	1								
STA 409	3								
<b>PROFESSIONAL ELECTIVES - 9 cr.</b>					<b>Advisor Information</b>				
					<b>Advisor:</b>				
					<b>Office:</b>				
					<b>Phone:</b>				
					<b>E-Mail:</b>				

## VI. INTERNATIONAL ENGINEERING PROGRAM (IEP) OVERVIEW

The *International Engineering Program (IEP)* in Civil Engineering is a *five-year* engineering program leading to degrees in CVE and German, *or* CVE and Spanish, *or* CVE and French. IEP students study language and culture each semester along with the CVE curriculum. In the fourth year of the five-year program, IEP students go abroad as interns for a six-month period with engineering based firms in Europe or Latin America. Many of our students in the German IEP spend their entire fourth year in Germany. The fall semester is spent studying and taking engineering courses at URI's sister university, the Technische Universitat Braunschweig (TUB), with the spring and summer months spent completing internships in German companies. Students in the Spanish IEP can follow *Option A* if Spanish is their native language, otherwise they follow *Option B*. *Option A* begins at an advanced Spanish language level, and students have the opportunity to take two courses in the Portuguese language. Their semester long internship experience is then in Brazil or Portugal. *Option B* is Spanish language only, and the internship experience is in a Spanish speaking country such as Mexico or Spain.

The *International Engineering Program* at the University of Rhode Island adds an entirely new dimension to engineering education. It prepares students to work and function effectively in fields of engineering, which are parts of a vast and ever growing international market. If you are a motivated, hard working and above all open-minded student with an interest in an international career that can span the globe, you will want to give this program serious consideration. Keep in mind that after graduation you will not only be a competent Civil engineer but also fluent in German, Spanish, Portuguese, or French. In addition, you will have acquired valuable engineering expertise in actual engineering work abroad that will put you at the forefront of the engineering profession. The required coursework for each program can be found on the pages shown below.

- **German** *International Engineering Program* is shown on page 16.
- **Spanish (Option A)** *International Engineering Program* is shown on page 17.
- **Spanish (Option B)** *International Engineering Program* is shown on page 18.
- **French** *International Engineering Program* is shown on page 19.

For further information and details about the *International Engineering Program*, contact:

**Prof. K. Wayne Lee, Ph.D., P.E.**

Professor and Chair  
Department of Civil and Environmental Engineering  
203 Bliss Hall

(401) 874-2692  
e-mail: lee@egr.uri.edu

*You should also visit <http://www.uri.edu/iep> for more information and details.*

German International Engineering Program  
**Civil and Environmental Engineering Course Requirements**  
**(157 Credit Hours)**

<i>First Year, First Semester: 16 cr.</i>	<i>First Year, Second Semester: 16 cr.</i>
3 CHM 101 General Chemistry 1 CHM 102 Chemistry Laboratory 1 EGR 105 Foundations of Engineering I 4 MTH 141 Introductory Calculus 3 GER 101 German for Engineers 3 PHY 203 Elementary Physics I 1 PHY 273 Physics Laboratory I	2 EGR 106 Foundations of Engineering II 3 GER 102 German for Engineers 4 MTH 142 Intermediate Calculus 3 PHY 204 Elementary Physics II 1 PHY 274 Physics Laboratory II 3 WRT 101 Composition (CW)
<i>Second Year, First Semester: 16 cr.</i>	<i>Second Year, Second Semester: 16 cr.</i>
3 CVE 250 CADD for Civil Engineers 3 CVE 240 Geomatics 1 CVE 241 Geomatics Laboratory 3 GER 103 German for Engineers 3 MCE 262 Statics 3 MTH 243 Calculus and Analytic Geometry	3 CVE 220 Mechanics of Materials 1 CVE 221 Mechanics of Materials Laboratory 3 GER 104 German for Engineers 3 MCE 263 Dynamics 3 MTH 244 Differential Equations 3 General Education Elective (C or CW)
<i>Third Year, First Semester: 17 cr.</i>	<i>Third Year, Second Semester: 15 cr.</i>
3 CVE 346 Transportation Engineering 4 CVE 354 Structural Engineering 3 CVE 374 Environmental Engineering 1 CVE 375 Environmental Engineering Lab. 3 GER 205 German for Engineers 3 MCE 354 Fluid Mechanics	3 CVE 347 Highway Engineering 1 CVE 348 Highway Engineering Lab. 3 CVE 370 Hydraulic Engineering 1 CVE 371 Hydraulic Engineering Lab. 4 GEL 103 Geological Earth Science 3 GER 206 German for Engineers
<i>Fourth Year, First Semester: 16 cr.</i>	<i>Fourth Year, Second Semester: 6 cr.</i>
3 CVE 465 Analysis and Design of Concr. Struct. 1 CVE 466 Structural Concrete Laboratory 3 GER 305 <i>or</i> GER 306 <i>or</i> GER 327 <i>or</i> GER 328 3 HIS 327 German History (L) 3 STA 409 Statistical Meth. in Research I 3 Fine Arts Requirement (A)	3 GER 315 Language Study Abroad 3 GER 316 Language Study Abroad  <i>(Internship in Germany)</i>
<i>Fifth Year, First Semester: 18 cr.</i>	<i>Fifth Year, Second Semester: 18 cr.</i>
3 CVE 381 Geotechnical Engineering 1 CVE 382 Geotechnical Engineering Lab. 2 CVE 497 Civil Engineering Design I 3 ECN 201 Prin. of Econ. - Microeconomics (S) 3 400-Level German Course Elective 3 General Education Elective (L) 3 Professional Elective <sup>a</sup>	3 CVE 483 Foundation Engineering 3 CVE 498 Civil Engineering Design II 3 EGR/GER 412 Professional Elective 3 400-Level German Course Elective (A) 3 General Education Elective (A) 3 Professional Elective <sup>a</sup>

<sup>a</sup>Three of the six credits of Professional Electives **must** be selected from the following courses: CVE 470, 471, 475, 478. The remaining three credits are to be selected from the list in the CVE Undergraduate Student Handbook

**University of Rhode Island**  
**Spanish International Engineering Program**  
**Civil and Environmental Engineering Course Requirements**  
**(A-Level - 157 Credit Hours)**

<i>First Year, First Semester: 16 cr.</i>	<i>First Year, Second Semester: 16 cr.</i>
3 CHM 101 General Chemistry 1 CHM 102 Chemistry Laboratory 1 EGR 105 Foundations of Engineering I 4 MTH 141 Introductory Calculus 3 SPA 205 Spanish Language and Style 3 PHY 203 Elementary Physics I 1 PHY 273 Physics Laboratory I	2 EGR 106 Foundations of Engineering II 3 SPA 206 Spanish Language and Style 4 MTH 142 Intermediate Calculus 3 PHY 204 Elementary Physics II 1 PHY 274 Physics Laboratory II 3 WRT 101 Composition (CW)
<i>Second Year, First Semester: 16 cr.</i>	<i>Second Year, Second Semester: 16 cr.</i>
4 CVE 250 CADD for Civil Engineers 3 CVE 240 Geomatics 1 CVE 241 Geomatics Laboratory 3 SPA 312 Advanced Spanish 3 MCE 262 Statics 3 MTH 243 Calculus and Analytic Geometry	3 CVE 220 Mechanics of Materials 1 CVE 221 Mechanics of Materials Laboratory 3 SPA 325 Introduction to Literary Genres 3 MCE 263 Dynamics 3 MTH 244 Differential Equations 3 General Education Elective (C or CW)
<i>Third Year, First Semester: 17 cr.</i>	<i>Third Year, Second Semester: 18 cr.</i>
3 CVE 346 Transportation Engineering 4 CVE 354 Structural Engineering 3 CVE 374 Environmental Engineering 1 CVE 375 Environmental Engineering Lab. 3 POR 200 Portugese for Spanish Speaking 3 MCE 354 Fluid Mechanics	3 CVE 347 Highway Engineering 1 CVE 348 Highway Engineering Lab. 3 CVE 370 Hydraulic Engineering 1 CVE 371 Hydraulic Engineering Lab. 3 ECN 201 Prin. of Econ. - Microeconomics (S) 4 GEL 103 Geological Earth Science 3 POR 205 Intermediate Portugese
<i>Fourth Year, First Semester: 16 cr.</i>	<i>Fourth Year, Second Semester: 6 cr.</i>
3 CVE 465 Analysis and Design of Concr. Struct. 1 CVE 466 Structural Concrete Laboratory 3 SPA 321 Spanish for Business and Technology 3 Latin American History (L) 3 STA 409 Statistical Meth. in Research I 3 Fine Arts Requirement (A)	3 SPA 316 Language Study Abroad 3 SPA 317 Language Study Abroad  <b>(Internship in Spanish/Portugese Country)</b>
<i>Fifth Year, First Semester: 18 cr.</i>	<i>Fifth Year, Second Semester: 15 cr.</i>
3 CVE 381 Geotechnical Engineering 1 CVE 382 Geotechnical Engineering Lab. 2 CVE 497 Civil Engineering Design I 3 ECN 202 Prin. of Econ. - Macroeconomics (S) 3 SPA 421 Business Spanish 3 General Education Elective (L) 3 Professional Elective <sup>a</sup>	3 CVE 483 Foundation Engineering 3 CVE 498 Civil Engineering Design II 3 EGR/SPA 412 Advanced Technical Spanish 3 400 Level Spanish(A) 3 General Education Elective (A) 3 Professional Elective <sup>a</sup>

<sup>a</sup> Three of the six credits of Professional Electives **must** be selected from the following courses: CVE 470, 471, 475, 478. The remaining three credits are to be selected from the list in the CVE Undergraduate Student Handbook.

**University of Rhode Island**  
**Spanish International Engineering Program**  
**Civil and Environmental Engineering Course Requirements**  
**(B-Level - 157 Credit Hours)**

<b><i>First Year, First Semester: 16 cr.</i></b>	<b><i>First Year, Second Semester: 16 cr.</i></b>
3 CHM 101 General Chemistry 1 CHM 102 Chemistry Laboratory 1 EGR 105 Foundations of Engineering I 4 MTH 141 Introductory Calculus 3 SPA 103 Intermediate Spanish 3 PHY 203 Elementary Physics I 1 PHY 273 Physics Laboratory I	2 EGR 106 Foundations of Engineering II 3 SPA 104 Intermediate Spanish 4 MTH 142 Intermediate Calculus 3 PHY 204 Elementary Physics II 1 PHY 274 Physics Laboratory II 3 WRT 101 Composition (CW)
<b><i>Second Year, First Semester: 16 cr.</i></b>	<b><i>Second Year, Second Semester: 16 cr.</i></b>
4 CVE 250 CADD for Civil Engineers 3 CVE 240 Geomatics 1 CVE 241 Geomatics Laboratory 3 SPA 205 Spanish Language and Style 3 MCE 262 Statics 3 MTH 243 Calculus and Analytic Geometry	3 CVE 220 Mechanics of Materials 1 CVE 221 Mechanics of Materials Laboratory 3 SPA 206 Spanish Language and Style 3 MCE 263 Dynamics 3 MTH 244 Differential Equations 3 General Education Elective (C or CW)
<b><i>Third Year, First Semester: 17 cr.</i></b>	<b><i>Third Year, Second Semester: 18 cr.</i></b>
3 CVE 346 Transportation Engineering 4 CVE 354 Structural Engineering 3 CVE 374 Environmental Engineering 1 CVE 375 Environmental Engineering Lab. 3 SPA 312 Advanced Spanish 3 MCE 354 Fluid Mechanics	3 CVE 347 Highway Engineering 1 CVE 348 Highway Engineering Lab. 3 CVE 370 Hydraulic Engineering 1 CVE 371 Hydraulic Engineering Lab. 3 ECN 201 Prin. of Econ. - Microeconomics (S) 4 GEL 103 Geological Earth Science 3 SPA 325 Introduction to Literary Genres
<b><i>Fourth Year, First Semester: 16 cr.</i></b>	<b><i>Fourth Year, Second Semester: 6 cr.</i></b>
3 CVE 465 Analysis and Design of Concr. Struct. 1 CVE 466 Structural Concrete Laboratory 3 SPA 321 Spanish for Business and Technology 3 Latin American History (L) 3 STA 409 Statistical Meth. in Research I 3 Fine Arts Requirement (A)	3 SPA 316 Language Study Abroad 3 SPA 317 Language Study Abroad  <b>(Internship in Spanish Country)</b>
<b><i>Fifth Year, First Semester: 18 cr.</i></b>	<b><i>Fifth Year, Second Semester: 18 cr.</i></b>
3 CVE 381 Geotechnical Engineering 1 CVE 382 Geotechnical Engineering Lab. 2 CVE 497 Civil Engineering Design I 3 ECN 202 Prin. of Econ. - Macroeconomics (S) 3 SPA 421 Business Spanish 3 General Education Elective (L) 3 Professional Elective <sup>a</sup>	3 CVE 483 Foundation Engineering 3 CVE 498 Civil Engineering Design II 3 EGR/SPA 412 Advanced Technical Spanish 3 400 Level Spanish(A) 3 General Education Elective (A) 3 Professional Elective <sup>a</sup>

<sup>a</sup> Three of the six credits of Professional Electives **must** be selected from the following courses: CVE 470, 471, 475, 478. The remaining three credits are to be selected from the list in the CVE Undergraduate Student Handbook.

**University of Rhode Island**  
**French International Engineering Program**  
**Civil and Environmental Engineering Course Requirements**  
**(154 Credit Hours)**

<b><i>First Year, First Semester: 16 cr.</i></b>	<b><i>First Year, Second Semester: 16 cr.</i></b>
3 CHM 101 General Chemistry 1 CHM 102 Chemistry Laboratory 1 EGR 105 Foundations of Engineering I 4 MTH 141 Introductory Calculus 3 FRN 103 French for Engineers (F) 3 PHY 203 Elementary Physics I 1 PHY 273 Physics Laboratory I	2 EGR 106 Foundations of Engineering II 3 FRN 104 French for Engineers (F) 4 MTH 142 Intermediate Calculus 3 PHY 204 Elementary Physics II 1 PHY 274 Physics Laboratory II 3 WRT 101 Composition (CW)
<b><i>Second Year, First Semester: 16 cr.</i></b>	<b><i>Second Year, Second Semester: 16 cr.</i></b>
4 CVE 250 CADD for Civil Engineers 3 CVE 240 Geomatics 1 CVE 241 Geomatics Laboratory 3 FRN 205 French for Engineers 3 MCE 262 Statics 3 MTH 243 Calculus and Analytic Geometry	3 CVE 220 Mechanics of Materials 1 CVE 221 Mechanics of Materials Laboratory 3 FRN 206 French for Engineers 3 MCE 263 Dynamics 3 MTH 244 Differential Equations 3 General Education Elective (C or CW)
<b><i>Third Year, First Semester: 17 cr.</i></b>	<b><i>Third Year, Second Semester: 18 cr.</i></b>
3 CVE 346 Transportation Engineering 4 CVE 354 Structural Engineering 3 CVE 374 Environmental Engineering 1 CVE 375 Environmental Engineering Lab. 3 FRN 301 <i>or</i> FRN 305 3 MCE 354 Fluid Mechanics	3 CVE 347 Highway Engineering 1 CVE 348 Highway Engineering Lab. 3 CVE 370 Hydraulic Engineering 1 CVE 371 Hydraulic Engineering Lab. 3 ECN 201 Prin. of Econ. - Microeconomics (S) 4 GEL 103 Geological Earth Science 3 FRN 302 <i>or</i> FRN 306
<b><i>Fourth Year, First Semester: 16 cr.</i></b>	<b><i>Fourth Year, Second Semester: 6 cr.</i></b>
3 CVE 465 Analysis and Design of Concr. Struct. 1 CVE 466 Structural Concrete Laboratory 3 FRN 480 Business French 3 European History (L) 3 STA 409 Statistical Meth. in Research I 3 Professional Elective <sup>a</sup>	3 FRN 315 Language Study Abroad 3 FRN 316 Language Study Abroad  <p style="text-align: center;"><b><i>(Internship in France)</i></b></p>
<b><i>Fifth Year, First Semester: 18 cr.</i></b>	<b><i>Fifth Year, Second Semester: 15 cr.</i></b>
3 CVE 381 Geotechnical Engineering 1 CVE 382 Geotechnical Engineering Lab. 2 CVE 497 Civil Engineering Design I 3 ECN 202 Prin. of Econ. - Macroeconomics (S) 3 FRN 327 French Literature (A) 3 General Education Elective (L) 3 Professional Elective <sup>a</sup>	3 CVE 483 Foundation Engineering 3 CVE 498 Civil Engineering Design II 3 EGR/FRN 422 Professional Elective 3 FRN 328 French Literature (A) 3 General Education Elective (A) 3 Professional Elective <sup>a</sup>

<sup>a</sup> Three of the six credits of Professional Electives **must** be selected from the following courses: CVE 470, 471, 475, 478. The remaining three credits are to be selected from the list in the CVE Undergraduate Student Handbook.

## VII. STUDENT SOCIETIES AND PROFESSIONAL AFFILIATION INFORMATION

### A. Student Chapter Professional Affiliations

#### 1. *American Society of Civil Engineers (ASCE)*

This is the most direct affiliation with the Civil Engineering profession that you can have. It is strongly recommended that all CVE students join this society. Student chapter membership is available at a reasonable cost. The student chapter is actively involved in a number of areas, including the annual concrete canoe and steel bridge competitions. The primary objectives of the local *ASCE* student chapter are to provide students with an orientation to the CVE profession and opportunities for involvement in student service and social activities while promoting enhanced CVE knowledge and skills through practical experience.

**Faculty Advisor: Dr. Leon Thiem - 207 Bliss Hall; 874-2693.**

#### 2. *Society of Women Engineers (SWE)*

*SWE* is a non-profit educational service organization of engineers founded in 1949 to help women engineers achieve their full potential, to encourage girls and young women to study math and science, and to expand the image of engineers. *SWE* has over 15,000 members throughout the U.S. and Puerto Rico. The URI chapter of *SWE* holds about 6 meetings each year whose focus ranges from social to educational. *SWE* conducts workshops on networking and improving resume writing and job interviewing skills. *SWE* also invite engineers from local industry to give presentations on what it is like to work as an engineer in the "real world." A main goal of the URI chapter is to provide a nurturing environment where women engineering students can meet one another and share their common experiences and concerns.

**Faculty Advisor: Dr. Gloria F. Boudreaux-Bartels - Kelly Hall; 874-5805.**

#### 3. *Associated General Contractors (AGC)*

This *AGC* student chapter is designed for students with a special interest in the construction industry. Student participation involves developing associations with construction contractors and their operations, field trips to construction sites and working with the management level of the *AGC* in furthering construction education.

**Faculty Advisor: Dr. Daniel W. Urish - 301 Bliss Hall; 874-2785.**

#### 4. *North American Geosynthetics Society (NAGS)*

The purpose of *SNAGS* is to familiarize undergraduate and graduate students with geosynthetics and the activities of the parent *NAGS* organization. Geosynthetics are relatively new materials to Civil Engineers, which are gaining acceptance and widespread use around the world in a variety of design projects. *SNAGS* encourages professional development and participation in the chapter provides students with the opportunity to learn about cutting edge technology. *SNAGS* activities include: joint participation with the *ASCE* student chapter in the annual concrete canoe competition, informative seminars given by industry representatives and practicing engineers, field trips to active local construction projects, and community service projects.

**Faculty Advisor: Dr. George E. Veyera - 209 Bliss Hall; 874-2684.**

**B. Engineering Honor Societies**

These societies honor the achievement and academic excellence of engineering students. Membership is a clear recognition of these superior qualities.

**1. Chi Epsilon ( )**

Membership in *Chi Epsilon* places a mark of *distinction* on those undergraduate and graduate Civil Engineering students who demonstrate high scholastic ability, character, and sociability. The primary objectives of *Chi Epsilon* are to contribute to the improvement of the CVE profession; to recognize the basic characteristics of successful Civil Engineers and to aid in the development of these characteristics; to improve the education of the CVE departments of the colleges at which chapters are established. The local *Chi Epsilon* student chapter provides student tutoring and also academic recruiting activities at the secondary school level.

**Faculty Advisor: Dr. Raymond M. Wright - 102 Bliss Hall; 874-5985.**

**2. Tau Beta Pi ( )**

*Tau Beta Pi* is the national engineering honor society with chapters in over 172 institutions and a worldwide reputation for excellence in engineering education. The objectives are to recognize those students who have demonstrated distinguished scholarship and exemplary character, and "*to foster a spirit of liberal culture in engineering colleges.*" The primary activity of this student-governed organization is the election of new members. All newly elected members also participate in such projects as student tutoring and visits to local high schools to promote engineering as a career option. The URI *Tau Beta Pi* chapter annually sponsors review sessions for the *Fundamentals of Engineering (FE)* examination, which is the first step toward professional registration (*PE licensure*).

**Faculty Advisor: Dr. Harry Knickle - 122 Crawford Hall; 874-2678.**

**VIII. FACULTY AND STAFF DIRECTORY INFORMATION**

**DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING**  
*University of Rhode Island*

	<u>OFFICE</u>	<u>PHONE</u>
<b><u>Chairman:</u></b>		
• K. Wayne Lee, Professor	203 Bliss	874-2692
<b><u>Geotechnical Engineering:</u></b>		
• George E. Veyera, Professor	209 Bliss	874-2684
• William D. Kovacs, Professor Emeritus	207A Bliss	874-2500
• Christopher Baxter, Assistant Professor	207A Bliss	874-6575
<b><u>Environmental and Water Resources Engineering:</u></b>		
• Daniel W. Urish, Professor Emeritus	310 Bliss	874-2692
• Raymond M. Wright, Professor and Associate Dean	310 Bliss	874-2785
• Leon T. Thiem, Associate Professor	207B Bliss	874-2693
<b><u>Structural Engineering:</u></b>		
• George Tsiatas, Professor	303 Bliss	874-5117
• Dimitrios Karamanlidis, Associate Professor	302 Bliss	874-2783
• Mayrai Gindy, NSF Advance Assistant Professor	201 Bliss	874-5587
<b><u>Transportation Engineering:</u></b>		
• K. Wayne Lee, Professor	212 Bliss	874-2695
• Christopher Hunter, Assistant Professor	207A Bliss	874-2692
• Natacha Thomas, Assistant Professor	Bliss 311	874-9353
<b><u>Adjunct Faculty:</u></b>		
• Michael C. Apostal, Adjunct Associate Professor	203 Bliss	874-2692
• Diane L. Badorek, Adjunct Assistant Professor	207B Bliss	874-2693
• Jerry Baird, Adjunct Professor	203 Bliss	874-2692
• Milton E. Harr, Adjunct Professor	400 Bliss	874-2500
• William O'Neill, Adjunct Associate Professor	203 Bliss	874-2692
• Peter F. Osborn, Adjunct Assistant Professor	209 Bliss	874-2684
<b><u>Emeritus Faculty:</u></b>		
• Everett E. McEwen, Professor Emeritus	203 Bliss	874-2692
• Alan Marcus, Associate Professor Emeritus	“	“
• Calvin P. C. Poon, Professor Emeritus	“	“
<b><u>CVE Staff:</u></b>		
• Kim Boisclair, Department Secretary	203 Bliss	874-2692
• Brian Gray, Laboratory Manager	009 Bliss	874-2046
• Kevin Broccolo, Technical Services	009A Bliss	874-5387

**Note: CVE e-mail addresses can be found at the directory at the URI web site.**