

UNDERGRADUATE PROGRAMS

The University aims to provide students with a range of knowledge and skills which can, with appropriate motivation and initiative, be used in a variety of ways after graduation.

The following undergraduate programs offered at the University of Rhode Island are presented by college.

Study options vary from the traditional liberal education to programs that are heavily vocationally oriented. Successful completion of any course of study at the University, however, does not guarantee that the student will find either a specific kind or level of employment.

Students interested in the career opportunities related to particular programs of study are encouraged to consult University College advisors, the appropriate department chairperson, or Career Services. For students who are uncertain about their career choices, the Counseling Center also offers help.





UNIVERSITY COLLEGE

Jayne Richmond, *Dean*

Jessica Boisclair, *Coordinator, Students in Transition Center*

Dania Brandford-Calvo, *Director, International Education*

David Hayes, *Coordinator, Academic Enhancement Center*

Winifred Kelley, *Coordinator, Advising Programs for Student Athletes*

Linda Lyons, *Coordinator, Advising Programs*

Sarah Miller, *Coordinator, Feinstein Center for Service Learning*

Kimberly Washor, *Coordinator, Internships and Experiential Learning*

University College offers incoming students a broad range of advising services and the opportunity to explore the variety of courses and programs available at the University before they commit themselves to a major in a degree-granting college. All first-year students are enrolled in University College. Through its strong program of

academic advising by faculty, University College's purpose is to assist new students in making a smooth transition to the University and to provide special assistance, programs, and events for all students. Our "Early Alert" program provides early intervention services to students wanting help with various personal or academic challenges in the transition to college.

Advisors, who have regular office hours at University College in Roosevelt Hall, are faculty members who represent each of the majors in the degree-granting colleges. Each student is assigned an academic advisor who is a specialist in the area in which the student intends to major or who has a particular interest in working with students who are undecided about their choice of major. Advisors help students select and schedule the right courses, become familiar with University procedures and programs, and obtain whatever assistance they need. They also help student-athletes.

If more students seek access to a program than can be accommodated due to

limited facilities or faculty, those students who have shown the highest promise for academic success in the program will be admitted first. Where such limitations exist, the student must apply for acceptance in the program under conditions established by the specific department or college. This applies specifically to programs that have been declared "oversubscribed" by the vice president for academic affairs. Students who cannot be admitted to the program of their first choice can request entry into another program for which they have satisfied the entrance requirements, or they can spend one or two additional semesters in University College preparing to qualify for another program.

For more information, visit uri.edu/uc or call 401.874.2993.

COLLEGE OF ARTS AND SCIENCES

Winifred E. Brownell, *Dean*

Wilfred P. Dvorak, *Associate Dean*

Robert C. Bullock, *Associate Dean*

Earl N. Smith III, *Assistant Dean*

Jonathan L. Blaney, *Business Manager*

The College of Arts and Sciences has two main objectives: to enable all students to understand our intellectual heritage, the physical and biological world in which we live, and our social, economic, and political development; and to provide programs of professional education in selected fields as well as a strong foundation for graduate study. The college has programs of study leading to the following degrees: Bachelor of Arts, Bachelor of Science, Bachelor of Fine Arts, and Bachelor of Music.

For information on prelaw, pre-physical therapy, premedical, pre-dental, pre-veterinary, and teacher education programs, see pages 40–42.

Curriculum Requirements

In order to earn a degree in the College of Arts and Sciences, the student must meet requirements in three main areas: the major, Basic Liberal Studies, and electives. A description of these areas follows.

1. The Major. Every student is required to specialize in a particular area or discipline called the major. The requirements for each major vary from field to field, and are described in this section. Any student who has met the requirements for two separate majors within the Bachelor of Arts, Bachelor of Science, Bachelor of Fine Arts, or Bachelor of Music degree programs in the College of Arts and Sciences has earned a double major and may have both fields listed on the transcript.

In order to meet graduation requirement, a student must maintain a 2.00 grade point average in all courses required for his or her major. This restriction applies in every case, unless a different policy is explicitly stated in the description of the degree program. One-half of the total number of

credits needed in a given major must be earned at the University of Rhode Island.

Curricular Modifications. In consultation with the advisor, and with the approval of the department chairperson, a student will be permitted to modify the normal requirements of the major. The decision of the department chair is final. Requirements outside the major may be modified only with approval of the Scholastic Standing and Petitions Committee of the College of Arts and Sciences. Petition forms are available in the Office of the Dean. Minimum grade point average and total credit requirements are not petitionable.

2. Basic Liberal Studies. In the College of Arts and Sciences, general education requirements are called Basic Liberal Studies and are required of all students. This series of courses is intended to ensure that students have educational experiences that will help them to become informed and responsible participants in society and contribute to the full development of their individual capabilities. The Basic Liberal Studies program embodies the philosophy and fundamental knowledge that characterizes an arts and sciences education.

The following courses are approved by the College of Arts and Sciences to fulfill Basic Liberal Studies requirements. For an explanation of course codes, see pages 165–166.

English Communication

Writing (ECw): ELS 112, 122; WRT 104, 105, 106, 201, 227, 235, 302, 303, 304 [D], 305 [D], 333.

General (EC): COM 100 [D], 110 [D]; LIB 120; PHL 101.

Fine Arts and Literature

Fine Arts: ARH 120 [D], 251 [D], 252 [D]; ART 101, 207; FLM 101 [D], 203 [D], 204 [D], 205 [D]; HPR 105, 124; LAR 201; MUS 101 [D], 106 [D], 111, 292, 293 [D]; PLS 233; THE 100, 181, 351 [D], 352 [D], 381, 382, 383.

Literature: AAF 247 [D], 248 [D]; CLA 391 [D], 395 [D], 396 [D], 397 [D]; CLS 160 [D]; ENG 110 [D], 160 [D], 241 [D], 242 [D],

243 [D], 247 [D], 248 [D], 251 [D], 252 [D], 260 [D], 262, 263 [D], 264, 265, 280 [D], 300 [D], 302 [D], 303 [D], 304 [D], 355 [D], 357 [D], 358 [D]; FRN 309 [D], 310 [D], 320 [D], 391 [D], 392 [D], 393 [D]; HPR 125; RUS 391 [D], 392 [D]; SPA 305 [D], 306 [D], 307 [D], 308 [D], 320 [D].

Foreign Language and Cross-Cultural Competence

See page 50, Basic Liberal Studies requirements.

Letters

AAF 150 [D], 201 [D], 355 [D], 356 [D]; APG 327; BGS 392 [D]; CLS 160 [D], 235; EGR 316; ENG 110 [D], 160 [D], 243 [D], 251 [D], 252 [D], 280 [D], 355 [D], 356 [D]; FRN 391 [D], 392 [D], 393 [D]; HIS 111, 112, 113 [D], 114 [D], 116, 117, 118 [D], 130 [D], 132 [D], 141 [D], 142 [D], 145 [D], 146 [D], 150 [D], 160 [D], 171 [D], 172 [D], 180 [D], 304, 305, 310 [D], 311 [D], 314, 323 [D], 327 [D], 332 [D], 333 [D], 340 [D], 341 [D], 346 [D], 351 [D], 355 [D], 356 [D], 374 [D], 375 [D]; HPR 107; JOR 110 [D]; LAR 202 [D]; LET 151L, 151Q, 151R [D]; NUR 360 [D]; PHL 101, 103, 204, 210 [D], 212 [D], 215, 217 [D], 235, 314, 316 [D], 321, 322, 323 [D], 325 [D], 328 [D], 331 [D], 346, 355; PSC 341, 342; PSY 310; RLS 111 [D], 125, 126, 131 [D]; WMS 220 [D], 320 [D].

Mathematical and Quantitative Reasoning

BUS 111; CSC 101, 201; HPR 108; MTH 107, 108, 111, 131, 141; MTH/PSC 109; STA 220.

Natural Sciences

AFS 190, 201, 211; APG 201 [D]; AST 108; AVS 101 [D]; BCH 190; BIO 101, 105, 106, 286 [D]; CHM 100, 101, 103, 112; GEO 100, 102, 103, 110, 120; HPR 109; MIC 190; NFS 207; NRS 190; OCG 110, 123, 131; PHY 109, 111, 112, 140, 185, 186, 203, 204, 205, 273, 274, 275; PLS 150, 190; TMD 113.

Social Sciences

APG 200 [D], 202, 203 [D], 301 [D]; CPL 202; ECN 100 [D], 201, 202, 306, 381 [D]; EDC 102 [D]; EEC (REN) 105, 310, 356; GEG 101 [D], 104 [D], 202; HDF 225;

Basic Liberal Studies Requirements

Courses used to fulfill these requirements must be selected *from the list approved by the College of Arts and Sciences* (see previous page). Basic Liberal Studies requirements are designed only for students in the College of Arts and Sciences, but they also fulfill the University's General Education requirements.

Courses in a student's major may not be used to fulfill requirements in Fine Arts and Literature, Letters, Natural Sciences, or Social Sciences. Students completing a double major, however, may use courses from one major of their choice to fulfill these requirements.*

BACHELOR OF ARTS

English Communication: 6 credits

(3 must be in a writing course; the other 3 may be in another writing course at the 200 level or higher or may be selected from the general communication courses)

Fine Arts and Literature: 6 credits

(3 in Fine Arts; 3 in Literature)

Foreign Language/Cross-Cultural Competence: 6 credits

Choose one of the following options:

- Two-course sequence in a language studied for two or more years in high school through at least the 103 level in a modern language or 301 in a classical language
- Demonstration of competence through the intermediate level by examination or by successful completion of 104 in a modern language or 302 in a classical language
- Two-course sequence in a language not previously studied (or studied for less than two years in high school) through the beginning level (101, 102)
- Study abroad in an approved academic program for at least one semester. Summer programs, including the URI in England program, will not satisfy this requirement.

Letters: 6 credits* (Must be from multiple disciplines.)

Mathematical and Quantitative Reasoning: 3 credits

Natural Sciences: 6 credits* (Must be from multiple disciplines.)

Social Sciences: 6 credits* (Must be from multiple disciplines.)

BACHELOR OF SCIENCE, BACHELOR OF FINE ARTS, AND BACHELOR OF MUSIC

English Communication: 6 credits

(3 must be in a writing course; the other 3 may be in another writing course at the 200 level or higher or may be selected from the general communication courses)

Fine Arts and Literature: 6 credits

(3 in Fine Arts; 3 in Literature)

Foreign Language/Cross-Cultural Competence: 6 credits

Choose one of the following options:

- Two-course sequence in a language studied for two or more years in high school through at least the 103 level in a modern language or 301 in a classical language
- Demonstration of competence through the intermediate level by examination or by successful completion of 104 in a modern language or 302 in a classical language
- Two-course sequence in a language not previously studied (or studied for less than two years in high school) through the beginning level (101, 102)
- Study abroad in an approved academic program for at least one semester. Summer programs will not satisfy this requirement.
- Two courses in cross-cultural competence selected from the following list: CPL 300 [D]; FRN 309 [D], 310 [D], 320 [D]; HIS 132 [D], 171 [D], 172 [D], 180 [D], 311 [D], 327 [D], 374 [D], 375 [D]; LET 151L,Q,R; NRS 300; PHL 331 [D]; RLS 131 [D]; SPA 320 [D]; TMD 224 [D]. Six credits of a full-semester approved Intercultural Internship in a foreign country through the Office of Internships and Experiential Education may be substituted for cross-cultural competence courses.

Letters: 6 credits

Mathematical and Quantitative Reasoning: 3 credits

Natural Sciences: 6 credits

Social Sciences: 6 credits

* Students may use only *one course per discipline* (as identified by the course code) to fulfill requirements in Letters, Natural Sciences, and Social Sciences, except that students earning both a B.A. and another degree are exempt from this rule. For an explanation of course codes, see pages 165–166.

HPR 110 [D], 201 [D]; HSS 130 [D]; JOR 110 [D]; KIN 123 [D]; LIN 200 [D]; MAF 100; NUR 150 [D]; PSC 113 [D], 116 [D], 274 [D], 288; PSY 103 [D], 113 [D], 232 [D], 235 [D], 254 [D], 255 [D]; SOC 100 [D], 212 [D], 230 [D], 240 [D], 242 [D], 274 [D]; TMD 224; WMS 150.

3. Electives. Electives are courses that are not included in the Basic Liberal Studies or major requirements, and that students may freely select to earn the total number of credits required for graduation. Many students use their elective credits to develop a second major or a minor field of study (see page 35).

Course Load. No student may take more than 19 credits per semester without permission from the dean. Students on academic probation are limited to 15 credits.

Repeating Courses for Credit. Unless otherwise stated in the course description, a course may not be repeated for credit. Credit can be counted only once toward the total credits required for graduation.

Study Abroad. Students eligible for the Study Abroad option to fulfill the Basic Liberal Studies Foreign Language and Culture requirement must enroll for full-time study in an approved academic program for one semester. Summer programs are not approved for this option. Students must successfully complete a minimum of six credits to have their requirement satisfied.

Graduation. *It is the responsibility of the student to be familiar with University and College requirements and to file for graduation with the Office of the Dean.* Deadlines for filing are as follows:

May Graduation—October 1

August Graduation—April 1

December Graduation—August 1

Seniors completing their final course work off campus must file a Senior Off-Campus Study Form with the Office of the Dean and should file for graduation before leaving campus.

Bachelor of Arts

The Bachelor of Arts curriculums provide a general cultural background and an opportunity to major in any one of 36 fields of study.

Each candidate for a B.A. degree must meet certain minimum curricular requirements in quantity and quality. These requirements include at least 120 passed credits, with at least 42 credits in courses numbered 300 or above, and an overall grade point average of at least 2.00. In addition to meeting the requirements of the Basic Liberal Studies program, each candidate must complete a major and a number of elective courses. The major totals 27–36 credits.

The B.A. major is the discipline or subject area in which the degree is granted. It may include not only required courses within the major department but also courses in related subjects. Students should declare this major before the end of their fourth semester.

The major comprises no fewer than 27 nor more than 36 credits. These, however, are exclusive of any credits that are outside the major department but may be required by that department as prerequisites. Including such prerequisites, the major may not exceed 39 credits.

Students may earn up to 15 credits in their major department in addition to those required for the major as identified by course code, counting as electives those credits earned in excess of the major requirements. Any credits in excess of this number in the major will not count toward the 120 credits required for graduation.

At least half of the credits in the major must be earned at URI.

Majors include: African and African-American studies, anthropology, art (history and studio), chemistry, classical studies, communication studies, comparative literature studies, computer science, economics, English, film media, French, German, history, Italian, journalism, Latin American studies, mathematics, music (music, jazz studies, and music history and literature),

philosophy, physics, political science, psychology, public relations, sociology, Spanish, women's studies, and writing and rhetoric.

Bachelor of Science

The Bachelor of Science curriculums are professionally oriented and, in general, meet the accreditation standards of national professional associations.

All candidates for the B.S. degree must fulfill the requirements of the Basic Liberal Studies program and complete a major of 30–55 credits within a department or program. In addition, a department may require for its major certain courses in other departments, with the stipulation that these courses may still be applied to the Basic Liberal Studies program requirements. Students must earn an overall grade point average of at least 2.00. No more than 130 credits can be required in a program. At least half the credits in the major must be earned at URI. Each major within the B.S. curriculum has certain more specific requirements, as listed on the following pages in this section.

Majors include: chemistry, chemistry and chemical oceanography, chemistry and forensic chemistry, computer science, economics, mathematics, physics, physics and physical oceanography, and sociology.

Bachelor of Fine Arts

URI's Bachelor of Fine Arts curriculums provide the opportunity to discover and develop creative capacities in the fine arts. The emphasis is on richness of program and quality of experience rather than the development of isolated skills. Further details and appointments may be obtained through the Office of Admission.

All candidates for the B.F.A. degree are required to meet the requirements of the Basic Liberal Studies program and to earn an overall grade point average of at least 2.00. At least half the credits in the major must be earned at URI.

Majors include: art and theatre.

Bachelor of Music

The Bachelor of Music curriculum is designed to prepare qualified students for careers in the field of music. Students may select one of three majors depending on their aims and abilities. Admission requirements for the music education program are described on page 42.

All candidates for the B.M. degree are required to meet the Basic Liberal Studies requirements and to earn an overall grade point average of at least 2.00. At least half the credits in the major must be earned at URI. Students are expected to attend department-sponsored events each semester.

Majors include: music composition, music education, and music performance (see pages 61–65).

All areas provide for a good background in academic subjects, and each curriculum contains courses for the development of sound musicianship and excellence in performance. An audition conducted by members of the Music Department is required for permission to register for work toward the B.M. degree. The music education curriculum includes courses in educational psychology, conducting, methods, and a teaching internship that leads to state certification for teachers.

The total number of credits required for graduation is 124 for music composition, 128 for music education, and 124 for music performance.

African and African-American Studies

Faculty: Professor Quainoo, *interim director*. Professors Dilworth, Okeke-Ezigbo, and Weisbord; Associate Professors Harris, and Schwartz; Assistant Professor Ferguson; Adjunct Faculty Barber, Lafayette, and McCray.

The African and African-American studies program is an interdisciplinary program offered jointly by URI and Rhode Island College. Students in this program may take courses at either institution to fulfill major

requirements. The program's objective is to broaden students' intellectual and global experiences through the study of Africa and African diaspora.

Students selecting this major must complete a minimum of 30 credits including AAF 201 and 202. Six credits must be selected from each of the following areas: *history and politics* (AAF 290, 300; AAF/HIS 150, 359, 388; AAF/PSC 380, 408, 410, 415, 466; PSC 372; WMS 351); *arts and humanities* (AAF/ARH 330, 331; AAF/ENG 247, 248, 360, 362, 363, 364, 474); and *social and behavioral science* (AAF 300; AAF/COM 333; COM 310A, 465). The remaining 6 credits must be chosen from courses approved for the above groups.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

A minor is also available (see page 35).

Anthropology

The Department of Sociology and Anthropology offers the degree of Bachelor of Arts (B.A.) in anthropology.

Faculty: Professor Loy, *chairperson*. Professor Poggie; Assistant Professors Bovy and Garcia-Quijano; Professor Emerita LaVelle.

Students desiring to major in anthropology must complete a total of 30 credits (maximum 45 credits) in anthropology including *introductory courses*: APG 200, 201, 202, and 203 (12 credits); *methods courses*: APG 300, 302, 412, or 417 (3 credits); *theory courses*: APG 401 (3) and APG 327 or 417 (3), for a total of six credits. *Note:* APG 417 may be taken to fulfill either the *methods* or *theory requirement*, but not both. The remaining nine credits may be any APG course. No more than six credits in independent study and/or field experience courses may be used toward the 30 credits required for the major.

It is strongly recommended that anthropology majors take at least one course in inferential statistics (e.g., STA 308 or 409), complete a foreign language through the intermediate level, and gain computer proficiency. Early in the junior year, students

who plan to go on to graduate school should meet with their advisor for curricular counseling.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above. In order to transfer into the anthropology program from University College, a student must have completed at least 24 credits and have earned a minimum of a 2.00 GPA.

Art and Art History

The Department of Art offers a Bachelor of Arts (B.A.) degree with a major in either art or art history, and a Bachelor of Fine Arts (B.F.A.) degree in art.

Faculty: Professor Dilworth, *chairperson*. Professors Klenk, Matthew, Onorato, Pagh, Richman, Roworth, and Wills; Associate Professors Hollinshead and Hutt; Assistant Professors Anderson and Warner; Professors Emeriti Calabro, Fraenkel, Holmes, Leete, Parker, and Rohm.

BACHELOR OF ARTS

Art. It is recommended that students intending to major in art plan to complete foundation studio courses (ART 101, 103, 207) and one art history course (ARH 251 or 252) in the freshman year. For graduation, a minimum of 36 credits in the major (maximum 51) must be completed, including: studio courses ART 101 (3), 103 (3), and 207 (3); art history courses ARH 251 (3), 252 (3); and two art history electives (6) at the 300 level or above, one of which must be selected from the following modern or contemporary art courses: ARH 331, 363, 364, 374, 375, 376, 377, 380 (with topic approved by chair), 461, 462, 480 (with topic approved by chair).

During the first semester of the sophomore year, all B.A. candidates in art must participate in ART 002 Sophomore Review. To participate, students must have a 2.30 grade point average in the foundation courses (ART 101, 103, 207) and submit a one-page statement of purpose.

An additional six (6) credits must be selected from one of the following sequences of studio courses: ART 204, 304; 208, 309; 213, 314; 215, 316; 221, 322; 231, 332; 233, 334; 243, 344. This sequence must be completed by the end of the junior year. An additional three (3) credits of studio art on the 200- or 300-level must be selected.

In the senior year, an additional six (6) credits must be selected from 300- or 400-level studio courses (except 301).

A total of 120 credits is required for graduation. Students must fulfill the requirements of the Basic Liberal Studies program and take 24–39 credits in art and 12 credits in art history. Of the 120 credits required for graduation, 42 credits must be in courses numbered 300 or above.

Art History. It is recommended that students intending to major in art history plan to complete a minimum of six credits in the history of art by the end of the sophomore year. For graduation, students must complete a minimum of 30 credits (maximum 45 credits) in art history, including ARH 251 and 252 (6). At least 12 credits must be taken from ARH 354, 356, 359, 363, 365. An additional six credits must be taken from the preceding group or one or more 200 or 300 level ARH courses except ARH 300, 371, or 372. An additional six credits must be taken at the 400 level. At least three of these credits must be taken from ARH 461, 462, 475, 480. It is recommended that students who expect to pursue graduate studies in art history take ARH 469 or 470.

It is recommended that students majoring in art history achieve intermediate-level proficiency in at least one foreign language. Students anticipating graduate study in art history may need proficiency in a second foreign language. Students are also encouraged to enroll in courses in art studio, history, literature, music, and philosophy.

A total of 120 credits is required for graduation. Students must fulfill the requirements of the Basic Liberal Studies program and take 30–45 credits in art history. Students may use an approved course in

art studio to satisfy Basic Liberal Studies requirements. Of the 120 credits required for graduation, 42 credits must be in courses numbered 300 or above.

BACHELOR OF FINE ARTS

It is recommended that students intending to enter the B.F.A. program complete foundation courses (ART 101, 103, 207) and one art history course (ARH 251 or 252) in the freshman year. B.F.A. majors should complete a minimum of 24 credits in ART courses by the end of the sophomore year.

Students in the B.F.A. program must complete a minimum of 72 credits in the major. Art courses required of all majors include ART 101 (3), 103 (3), 207 (3), 208 (3), either 213 or 215 (3), 405 (3), 406 (3) (with departmental permission) or six credits of ART at the 400 level (6). An additional 12 credits must be selected from 200-level ART courses, and an additional 24 credits must be selected from 300- or 400-level ART courses.

During the first semester of the sophomore year, all B.F.A. candidates must participate in ART 002 Sophomore Review. To participate, students must have a 2.30 grade point average in the foundation courses (ART 101, 103, 207) and submit a one-page statement of purpose.

B.F.A. students must take 15 credits in art history, including ARH 251, 252, an additional three (3) credits at the 200 or 300 level, and six (6) credits at the 300 level or above, three of which must be selected from the following modern or contemporary art courses: ARH 331, 363, 364, 374, 375, 376, 377, 380 (with topic approved by chair), 461, 462, 480 (with topic approved by chair). Note: Only 3 credits from ARH 374, 376, or 377 may be used toward the 72 credits required for the major.

A minimum of 120 credits is required for graduation, including the following: major requirements in art (57), and art history (15). Students must meet the requirements of the Basic Liberal Studies program and may not use an ARH or ART course to fulfill the Fine Arts category of this requirement.

Chemistry

The Department of Chemistry offers a Bachelor of Arts (B.A.) degree and a Bachelor of Science (B.S.) degree. The department also offers the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in chemistry.

Faculty: Professor Euler, *chairperson*. Professors C. Brown, Dain, Freeman, Kirschenbaum, Oxley, Rosen, Smith, and S. Yang; Associate Professor Lucht; Assistant Professors DeBoef, Major, and Narayanan; Professors Emeriti P. Brown, Cheer, Cruickshank, Fasching, Goodman, Nelson, Rosie, Traficante, and Vittimberga.

BACHELOR OF ARTS

Students in this program must complete a minimum of 31 credits (maximum 45) in chemistry by taking either 10 credits as CHM 191, 192 or 8 credits as CHM 101, 102, 112, 114; and 20 credits as CHM 212, 226, 227, 228, 335, 431, and 432. One additional course must be chosen from CHM 401, 412, 427, or 441. CHM 191 can be substituted for CHM 101 and 102. CHM 229 and 230 may be substituted for CHM 226.

MTH 141 and 142 and one year of physics (PHY 111, 112, 185, and 186, or PHY 203, 204, 273, and 274) are required.

A total of 120 credits is required for the B.A. At least 42 of these must be in courses numbered 300 or above.

BACHELOR OF SCIENCE

Designed to prepare the student for a career in chemistry, this curriculum provides a thorough training in both theory and practice in the fields of analytical, physical, organic, biochemistry, and inorganic chemistry. Those who complete this curriculum are prepared to practice as a chemist, pursue graduate studies in chemistry, or enroll in a professional school in a related area such as medicine, dentistry, or pharmacy. Preprofessional studies can be focused through the use of electives.

The B.S. degree is accredited by the American Chemical Society Committee on Professional Training of Chemists. Graduates receive a certification card issued by the society and are eligible for senior membership after two years of experience in the field of chemistry. It is strongly recommended that WRT 104, 105, or 106 be taken in the freshman year. CHM 425, 427 should be taken in the junior year by students planning research or advanced course work in organic chemistry. Six credits of "curriculum requirements" shall include either CHM 353 or any 500-level courses with department approval.

B.S. students desiring the American Chemical Society option in chemistry/biochemistry must take BCH 581, 582. Six additional credits in undergraduate research (CHM 353) are also required to satisfy requirements for advanced laboratory. CHM 353 will be supervised by faculty with expertise in biochemistry. Students electing the chemistry/biochemistry option may wish to take additional courses in molecular biology as electives.

A total of 130 credits is required for the B.S. degree. Accreditation guidelines require chemistry majors to take 55 credits toward the chemistry major.

Freshman Year

First semester: 16–18 credits

CHM 191 (5) (or CHM 101, 102 [4]); MTH 141 (4), language or free elective (3), Basic Liberal Studies requirements (5–6).

Second semester: 16–18 credits

CHM 192 (5) (or CHM 112, 114 [4]); MTH 142 (4), language or free elective (3), Basic Liberal Studies requirements (5–6).

Sophomore Year

First semester: 17 credits

CHM 212 (4), 227 (3); MTH 243 (3); PHY 203, 273 (4), language or Basic Liberal Studies requirements (3).

Second semester: 18 credits

CHM 226 (2), 228 (3); MTH 244 (3); PHY 204, 274 (4), language or Basic Liberal Studies requirements (6).

Junior Year

First semester: 15 credits

CHM 335 (2), 431 (3); PHY 205, 275 (4); Basic Liberal Studies requirement (3), free elective (3).

Second semester: 17 credits

CHM 412 (3), 414 (2), 432 (3); Basic Liberal Studies requirements (6), free elective (3).

Senior Year

First semester: 14–19 credits

CHM 401 (3), 425 (2), 427 (3), curriculum requirements (3–6), free electives (3–5).

Second semester: 15 credits

CHM 492 [capstone] (1), 402 (2), 441 (3), free electives (9).

Chemistry and Chemical Oceanography

The Department of Chemistry and the Graduate School of Oceanography offer a Bachelor of Science (B.S.) degree in chemistry and chemical oceanography. The faculty consists of the members of the department and the GSO's chemical oceanography faculty. *As of June 2009, new admissions to this program have been suspended.*

Coordinator: Professor Euler (Chemistry).

The program is designed to prepare students for careers in chemistry or chemical oceanography. This curriculum provides a thorough training in both theory and practice in the fields of analytical, physical, organic, inorganic, and oceanographic chemistry. Those who complete this curriculum are prepared to continue with graduate study leading to an advanced degree in chemistry or in chemical oceanography, to teach, or to enter specialized fields in development, control, technical sales, and research in the chemical or oceanographic industries. It is strongly recommended that WRT 104, 105, or 106 be taken in the freshman year.

A total of 130 credits is required for graduation.

Freshman and Sophomore Years follow the same program as B.S. in chemistry (see previous section).

Junior Year

First semester: 14 credits

CHM 335 (2), 431 (3); OCG 451 (3), Basic Liberal Studies requirement (3), free elective (3).

Second semester: 15 credits

CHM 432 (3); OCG 494 (3), Basic Liberal Studies requirements (6), free elective (3).

Senior Year

First semester: 16 credits

CHM 401 (3), 425 (2), 427 (3); OCG 493 (3), free electives (5).

Second semester: 17 credits

CHM 412 (3), 414 (2); OCG 521 (3), free electives (9).

Chemistry and Forensic Chemistry

The Department of Chemistry offers a Bachelor of Science degree in chemistry and forensic chemistry.

Coordinator: Professor Euler

Students who earn a degree in chemistry and forensic chemistry have a number of potential career opportunities. Most forensic chemists work in government laboratories, typically affiliated with a medical examiner's office. Students wishing to earn an American Chemical Society accredited degree need to take only CHM 402 and 492 and PHY 205 and 275.

The course sequence given below is the typical curriculum for majors in chemistry and forensic chemistry, but modifications in the timing of upper level courses are acceptable. The degree emphasizes a strong preparation in chemistry supplemented by an introduction to the field of forensic science. In addition to the required courses, students are encouraged to take SOC 230, Crime and Delinquency, to meet one of their social science general education requirements.

A total of 130 credits is required for graduation.

Freshman and sophomore years follow the same program as the B.S. in chemistry (see above).

Junior Year:

First semester: 15 credits

CHM 335 (2), 354 (3), 391 (1), 431 (3), Basic Liberal Studies requirement (3), free elective (3).

Second semester: 17 credits

CHM 392 (3), 412 (3), 414 (2), 432 (3), Basic Liberal Studies requirement (6).

Senior Year:

First semester: 15 credits

CHM 391 (1), 401 (3), 425 (2), 427 (3), free electives (6).

Second semester: 16 credits

CHM 354 (3), 391 (1), 441 (3), free electives (9).

For more information see chm.uri.edu.

Classical Studies

The Department of Modern and Classical Languages and Literatures offers the Bachelor of Arts (B.A.) degree with a major in classical studies.

Faculty: Professor Suter, section head.

Students selecting classical studies as a major must complete a minimum of 30 credits. Twenty-four of the 30 credits must be in Latin and Greek (only six credits of either LAT 101, 102, or GRK 101, 102 may count toward the required 24 credits) as follows: a) a minimum of six credits in each language (12); b) the balance of 12 credits in either or both language(s) (12). The remaining six credits must be from the following: ARH 354; CLA 391, 395, 396, 397; HIS 300, 303; PHL 321 (6).

Certification in secondary education in Latin is available through the Department of Education.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Communication Studies

The Department of Communication Studies offers the Bachelor of Arts (B.A.) degree in communication studies.

Faculty: Associate Professor Derbyshire, *chairperson.* Professors Brownell, Chen, DiCioccio, Ketrow, Logan, N. Mundorf, Salazar, Swift, Torrens, and Wood; Associate Professors Leatham, K. McClure, and Quainoo; Assistant Professors Healey Jamiel, Petronio, and Ye; Instructors Alfano, August, S. Brown, Cabral, Fonseca, Greenwood, J. Mundorf, Proulx, Waitkun, and Wales; Professors Emeriti Anderson, Devlin, and Doody.

URI's program in communication studies provides maximum flexibility in planning for a variety of academic and occupational goals. The curriculum is personalized for each student. Although the student will play an important role in curriculum planning, his or her program is closely supervised by the advisor. Specific curricular, extracurricular, and internship programs are planned as integral parts of each student's program. Departmentally approved courses provide diversity or a more focused approach, depending on the student's needs and goals. Courses outside the department that relate to the student's needs and goals are also encouraged.

Courses in communication studies can count toward a minor in public relations when taken in conjunction with specific journalism and marketing courses.

Students selecting this major may pursue studies in business and professional communication, communication theory, oral interpretation, rhetoric and public address, public relations, radio and TV advertising, and similar career goals.

Students must achieve a minimum grade of B- in COM 100 or COM 110 in order to transfer to the College of Arts and Sciences with a major in Communication Studies. The program requires a

minimum of 36 credits (maximum 51) in the major, including COM 202, 221, 381, 382, and 383. The remaining credits will be distributed as follows: at least two courses (6 credits) of COM 200 level; at least two courses (6 credits) of COM 300 level; and at least three courses (9 credits) of COM 400 level. A student must maintain a 2.00 grade point average in her or his major to meet graduation requirements. Courses of independent study (COM 471, 472, 491, 492) and internships do not fulfill the requirements for the major or minor.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Comparative Literature Studies

The Department of English and the Department of Modern and Classical Languages and Literatures offer jointly the Bachelor of Arts (B.A.) degree with a major in comparative literature studies.

Coordinator: Professor Leo (English and Film Media).

The choice of courses in a student's major and in the area of special interest must have both sufficient range (genre, period, and at least two literatures) and a specific focus. It must be approved by an advisor and filed with the dean's office.

Students in the comparative literature studies program fulfill the Basic Liberal Studies Fine Arts and Literature requirement by taking three credits in Fine Arts and three credits in Literature over and above their major literature requirements.

Students must complete a minimum of 30 credits in one of the following options:

1. English and One Foreign Literature in the Original Language. Nine credits in English and/or American literature, 300 level or above; nine credits in one foreign literature; three credits in literary theory or criticism (CLS/ENG 350 or ENG 302). The remaining credits are to be taken from the comparative literature core courses or the literature courses in English or Modern and Classical Languages and Literatures departments.

2. Two Foreign Literatures in the Original Language. Nine credits in each of two foreign literatures; three credits in literary theory or criticism (CLS/ENG 350 or ENG 302). The remaining courses are to be taken from the comparative literature core courses or the literature courses in the English or Modern and Classical Languages and Literatures departments.

3. World Literature in English Translation. Three credits in the nature of language from APG/LIN 200 or APG/LIN 220; three credits in literary theory or criticism (CLS/ENG 350 or ENG 302); at least one foreign literature in translation course. In addition, the student must take 12 credits in a language beyond the 102 level. The remaining credits are to be taken from the comparative literature core and/or literature courses offered by the English and Modern and Classical Languages and Literatures departments.

Up to 6 credits of film media courses may be applied toward the major for any of the three options described above, providing the film media courses have an international scope.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Computer Science

The Department of Computer Science and Statistics offers the Bachelor of Arts (B.A.) and the Bachelor of Science (B.S.) degree in computer science. The department also co-sponsors the B.S. in computer engineering (described in the College of Engineering section). At the graduate level, the department offers the Master of Science (M.S.) degree in computer science, the Doctor of Philosophy (Ph.D.) in computer science, and the Doctor of Philosophy (Ph.D.) in applied mathematical sciences with a specialization in computer science.

The department also offers a 24-credit minor in computer science.

Faculty: Professor Kowalski, *chairperson*. Professors Fay-Wolfe, Lamagna, and Peckham; Associate Professors Baudet and DiPippo; Assistant Professors Hamel and Hervé;

Adjunct Assistant Professors Encarnação, Henry, Ravenscroft, and Stephenson; Professors Emeriti Carney and Carrano.

Students majoring in computer science who leave URI and are subsequently readmitted must follow the computer science curriculum requirements in effect at the time of their readmission unless an exception is granted by the department chairperson and approved by the dean.

BACHELOR OF ARTS

The B.A. curriculum is designed to provide a solid foundation in the fundamentals of computer science.

In order to transfer from University College to the College of Arts and Sciences as a B.A. computer science major (or to be coded as such in the College of Arts and Sciences), a student must have completed CSC 211, CSC 212, and MTH 141, and must have at least a 2.00 GPA in *all* CSC and MTH courses required in the B.A. program that have been completed at the time of the application for transfer.

Students in the B.A. curriculum must complete a minimum of 36 credits (maximum 51) as follows: CSC 110 (4), 211 (4), 212 (4), 301 (4), 305 (4), 320 (4); one of 411 or 412 (4); two additional CSC courses at the 300-level or above, except that CSC 491, 492, and 499 may be used only with prior departmental approval. Also required are MTH 141 (4) and 215 (3); one COM course (3); and two WRT courses from among WRT 104, 105 (but not both), 201, or 333 (6).

A total of 121 credits is required for graduation; at least 42 of these credits must be at the 300 level or above.

BACHELOR OF SCIENCE

The B.S. curriculum is designed to provide a broad introduction to the fundamentals of computer science including software and systems, programming languages, machine architecture, and theoretical foundations of computing. The required mathematics preparation provides a basis for advanced work. Students will be well

prepared for careers or graduate study in computer science.

In order to transfer from University College to Arts and Sciences as a B.S. computer science major (or to be coded as such in the College of Arts and Sciences), a student must have completed CSC 211, CSC 212, MTH 141, and MTH 142 and must have at least a 2.00 GPA in *all* CSC and MTH courses required in the B.S. program that have been completed at the time of the application for transfer.

Students in the B.S. curriculum must complete a minimum of 56 credits as follows: CSC 110 (4), 211 (4), 212 (4), 301 (4), 305 (4), 340 (4), 411 (4), 412 (4), 440 (4), 499 (8); at least one of CSC 350 (4) and 445 (4); any two additional CSC courses at the 300-level or above, except that CSC 491, 492 may be used only with prior departmental approval.

Students also complete MTH 141 (4), 142 (4), 215 (3), 243 (3); PHY 203, 273 (4), 204, 274 (4) or PHY 213, 285 (4), 214, 286 (4); one COM course (3); and two WRT courses from among WRT 104, 105 (but not both), 201, or 333 (6).

A total of 129 credits is required for graduation. A possible course of studies follows.

Freshman Year

First semester: 15 credits

CSC 110 (4); MTH 141 (4); URI 101 (1); WRT 104 (3), Basic Liberal Studies requirements or electives (3).

Second semester: 17 credits

COM 101 (3); CSC 211 (4); MTH 142 (4), Basic Liberal Studies requirements (3), electives (3).

Sophomore Year

First semester: 17 credits

CSC 212 (4); MTH 243 (3); PHY 203, 273, (4), Basic Liberal Studies requirements or electives (6).

Second semester: 17 credits

CSC 301 (4); MTH 215 (3); PHY 204, 274, (4); WRT 333 (3), Basic Liberal Studies requirements or electives (3).

*Junior Year**First semester: 15 credits*

CSC 305 (4), 411 (4), CSC elective (4), Basic Liberal Studies requirement (3).

Second semester: 15 credits

CSC 340 (4), 412 (4), CSC elective (4), Basic Liberal Studies requirement (3).

*Senior Year**First semester: 17 credits*

CSC 440 (4), 499 (4), Basic Liberal Studies requirement (3), electives (6).

*Second semester: 16 credits*CSC 499 [**capstone**] (4), CSC elective (4), electives (8).**MINOR IN COMPUTER SCIENCE**

Students declaring a minor in computer science must earn 24 credits including CSC 211 (4), 212 (4), 301 (4), and two other CSC courses at the 300-level or above (8). In addition, students are expected to complete MTH 141 (4).

INTERNATIONAL COMPUTER SCIENCE PROGRAM

The Computer Science Department, under the auspices of the International Engineering Program (IEP) and the Department of Languages, also provides students the opportunity to participate in the International Computer Science Program (ICSP).

Students who complete the five-year program will earn two degrees: a B.S. or B.A. degree in computer science and a B.A. degree in German, French, or Spanish. In addition to computer science courses, students study the language, business, and culture of one or more countries in which the language predominates. Additionally, students will spend six months abroad in a professional internship in a European, Latin American, or Caribbean country, and can extend the stay by completing a semester of course work at a participating university. Upon graduation, students will be well prepared to participate at an international level in computer technology and to compete in the international technological marketplace.

Economics

The Department of Economics offers a Bachelor of Arts (B.A.) and a Bachelor of Science (B.S.) degree in economics.

Faculty: Professor Bodah, chairperson.

Professors Burkett, Lardaro, McIntyre, Mead, Miller, and Ramsay; Assistant Professors Van Horn and Zhang; Professors Emeriti Sharif, Starkey, and Suzawa.

BACHELOR OF ARTS

Students selecting this field must complete a minimum of 30 credits (maximum 48) in economics, including ECN 201 and 202 (6), 305 and 306 (6), 324 or 327 (3), and 323 or 328 (3).

In addition, at least 12 credits must be completed from economics courses numbered 300 or above. Students may substitute up to six credits from related courses taught by other departments. These substitutions must be approved by the economics department chairperson and filed with the Office of the Dean. Three of these credits can be from statistics—BUS 210, 212, STA 308, 409, or 412—and do not require departmental approval. Students planning to do graduate work in economics are encouraged to take ECN 375, 376 and at least one semester of statistics.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

BACHELOR OF SCIENCE

Students in this curriculum may elect one of two options, *applied economics* or *economic theory and methods*, and must inform the dean's office of the option.

Applied Economics. A minimum of 31 credits in economics including ECN 201, 202, 305, 327, 328, 375, and 376. In addition, students must complete COM 100; BUS 212 or MTH 451 or STA 308.

Economic Theory and Methods. A minimum of 31 credits in economics including ECN 201, 202, 305, 327, 328, and 376. In addition, students must complete MTH 141, 142, 215, 243, 307, and 244 or 442

or 435. This option is recommended for students preparing for graduate study in economics.

A total of 120 credits is required for graduation.

English

The Department of English offers a Bachelor of Arts (B.A.) degree. The department also offers the Master of Arts (M.A.) and Doctor of Philosophy (Ph.D.) in English. The Department of English offers (with the Department of Modern and Classical Languages and Literatures) the B.A. degree with a major in comparative literature studies (see page 55).

Faculty: Associate Professor Barber, chairperson. Professors Arakelian, Campbell, Cappello, Donnelly, Dvorak, Gititi, Leo, Okeke-Ezigbo, Stein, and Walton; Associate Professors Durand, Karno, Mandel, and Trimm; Assistant Professors Betensky, Covino, Davis, Dunson, Frankel, Jones, Rojas, Valentino, and Williams; Professors Emeriti Burke, Cuddy, Neuse, and Pearlman; Associate Professors Emeriti Cane, Swan, and Vaughn.

Students selecting this field must complete a minimum of 36 credits (maximum 51), 18 of which must be at the 300 level or above. All students must complete ENG 201 and 202 (6). The remaining 30 credits must include one course from each of the following five periods (15): *pre-1500* (ENG 251, 366, 367, 368, 381, 382); *1500–1660* (ENG 251, 280, 373, 382, 472); *1660–1800* (ENG 241, 251, 374, 480, 482); *19th century* (ENG 241, 242, 252, 347, 348, 375, 448); *20th century* (ENG 242; ENG/AAF 248; ENG 252, 348; ENG/AAF 362, 363, 364; ENG 317, 378, 379, 383, 387, 446, 447, 448, 469).

The remaining 15 credits may be fulfilled by taking any English courses at the 200–400 level that have not been counted toward a period requirement. If they wish, students may choose to emphasize a 12-credit focus area by completing 12 credits in one of the following focus areas: *identity studies* (ENG/AAF 247, 248; ENG

260, 337, 338; ENG/AAF 363, 364; ENG 385 387); *genre studies* (ENG 243, 262, 263, 264, 265, 300, 304, 336, 339; ENG/AAF 362; ENG 446, 447, 448, 469); *creative writing and publishing studies* (ENG 205A, 205B, 205C, 305, 330; WRT 201, 235, 333); *cultural studies with period emphasis* (ENG 302, 332, 347, 348; ENG/CLS 350; ENG 351, 374, 375, 474; or any one 300- or 400-level course approved for one of the five periods). ENG 499, an optional **capstone** senior seminar (in which a senior thesis is written), may be taken for three of the 15 credits required to complete the major.

Note: Freshmen are not admitted to 300- or 400-level courses without permission of the instructor. Sophomores are discouraged from taking 100-level courses.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Film Media

The Film Media Program offers a Bachelor of Arts (B.A.) degree and a minor.

Faculty: Associate Professor Wills, *interim director*. Professors Durand, Leo, Manteiga, Swift, Vocino, Walton, and Wood; Associate Professors Hutt, Trimm, and Wills; Assistant Professors Echevarría, Healy, Meagher, and Moore; Adjunct Professor DeSchepper; Adjunct Assistant Professors Bergstrom, Neugent, Smith, Tierney, and Zorabedian; Lecturer Romanow.

The Major. This interdisciplinary major offers students a curriculum that reflects developments in the field of film and film-related media: the expanding and often overlapping technologies involved in the production of moving images (filmic, electronic, and/or cybernetic); the broadening of their cultural and aesthetic contexts (where cinematic practices extend into television, video games, computer imagery, and virtual reality); and the increasingly cross-disciplinary nature of the theoretical responses to these developments. A wide range of courses is offered to acquaint students with the ways and means of production, distribution, and exhibition of

moving images—courses that examine the historical, theoretical, and technological approaches to this field of study. A broad understanding is seen as essential because film and film-related media have become increasingly international and global enterprises.

Students majoring in film media must complete a minimum of 30 credits (maximum 45) in approved courses toward the major. All students must complete the core courses: FLM 101 or 101H, FLM 203 (or ENG 302), FLM 204 (or FLM 205), including the senior-level seminar FLM 495; a minimum of 6 credits from the *production and technique* category and 6 credits from the *critical studies* category (following). This wide range of choices in film media courses permits students to design a major that will meet both personal and professional goals. Students must have a plan of study approved by an academic advisor in the film media program before beginning their coursework in the major.

Production & Technique: These courses focus on the different approaches to and practices of film/video production—how moving images are created, designed, and used to serve a variety of functions: ART 204, 215, 303, 304, 316, 404, 417; COM 341, 342, 445; FLM 110, 352, 401, 445X; JOR 230 and 331.

Critical Studies: These courses emphasize the important traditions of genre and the literary and aesthetic approaches toward understanding and valuing film media, and integrates them into their broad historical, cultural, and ideological contexts: AAF 352; ARH 374, 376, 377; CLS 450 and 451; COM 346, 414; ENG 205 D, 300, 302, 303, 304, 352, 451; FLM 203, 204, 205, 352X, 444X, 451, 491, and 495; FRN 320; HIS 358; ITL 315; JOR 110, 311; PHL 256X; SPA 320; and THE 182. FRN 320, ITL 315, and SPA 320 are taught in English. Other courses may be used for this category with prior approval of the program director. The following topics courses have been pre-approved: CLS 450 *Hispanic Stereotypes in Fiction and Film*, HPR 311 *Images of Masculinity in American Cinema*, HPR 311 *Rebel*

Images in American Films, HPR 411 *Money & Misery*, HPR 411 *War Stories*, HPR 411 *Film and Video Practicum*, and WMS 350 *Women and Film*. Other film-based courses may count toward the major or the minor with the permission of the film media program director.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

The Minor. Students who declare a minor in film media must complete 18 credit hours (at least 12 at the 200-level or higher) from those courses currently eligible to count toward the major. Courses in general education may count toward the minor. All courses must be taken for a grade except for the internship (Field Experience). It is strongly suggested that at least one course in the minor be from each of the following two approaches to film and media study:

Production. These courses focus on the practices of film/video/media production, the design and creation of moving images.

Criticism. These courses address critical and theoretical approaches to film media and the broader contexts of international film history, genre, and ideology in which they are situated.

French

The Department of Modern and Classical Languages and Literatures offers the Bachelor of Arts (B.A.) degree with a major in French.

Faculty: Professor Durand, *section head*. Professors Hammadou, Morello, and Rogers; Associate Professor Erickson; Assistant Professor De Bruin.

Students selecting this field are required to complete at least 30 credits (maximum 45) in French, not including FRN 101, 102, 391, 392, 393. They must take three credits from FRN 412, 473, or 474. Students must also complete a minimum of three additional FRN credits at the 400 level.

Additionally, students with proven competence in French language and literature, with permission of the advisor, section

head, department chairperson, and dean of the college, may take courses toward their concentration in related fields such as history, linguistics, art, or philosophy. Approval must be filed with the Office of the Dean.

Students completing the International Engineering Program or the International Business Program and the B.A. with a major in French simultaneously may use three credits of French literature toward the Fine Arts and Literature Basic Liberal Studies requirement. In addition, students in these programs are exempt from the one-course-per-discipline rule in Letters, Social Sciences, and Natural Sciences.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

German

The Department of Modern and Classical Languages and Literatures offers the Bachelor of Arts (B.A.) degree with a major in German.

Faculty: Professor Hedderich, *section head*. Professor Grandin; Associate Professors Kirchner and von Reinhart; Assistant Professor Rarick.

Students selecting this major complete at least 30 credits (maximum 45) in German, not including GER 101, 102, or 392. Students must complete six credits in literature, at least three of which must be taken at the 400 level, and must complete one additional 400-level German course. Students in the International Engineering Program must complete GER 411.

Students completing the International Engineering Program or the International Business Program and the B.A. with a major in German simultaneously may use three credits of German literature toward the Fine Arts and Literature Basic Liberal Studies requirement. In addition, students in these programs are exempt from the one-course-per-discipline rule in Letters, Social Sciences, and Natural Sciences.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

History

The Department of History offers a Bachelor of Arts (B.A.) degree. The department also offers the Master of Arts (M.A.) degree in history.

Faculty: Professor Schwartz, *chairperson*. Professors Cohen, Honhart, Mather, Rollo-Koster, Strom, Thurston, and Weisbord; Associate Professors Ferguson, George, Pegueros, Rusnock, and Sterne; Assistant Professors Buxton and Widell; Adjunct Assistant Professors Greenburg, Jensen, Reumann, and Rose; Professors Emeriti Findlay, Gutchen, Kim, and Klein.

Students selecting this field must complete a minimum of 30 credits (maximum 45) in history, including a minimum of six and a maximum of 12 credits in courses numbered 100 to 299. The balance of required credits is in courses numbered 300 or above, including (1) HIS 401 or 441 or 481 and (2) HIS 495. The two 400-level courses should be taken in consecutive semesters with the same instructor. Under unusual circumstances, with permission of the department chairperson, a student may substitute, in place of the seminar, HIS 391 leading to a substantial research paper. **Capstone** courses in this major are HIS 401, 441, 481, and 495.

Undergraduates wishing to take courses on the 500 level must secure the permission of the chairperson.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Italian

The Department of Modern and Classical Languages and Literatures offers the Bachelor of Arts (B.A.) degree with a major in Italian.

Faculty: Associate Professor Sama, *section head*. Associate Professor LaLuna.

Students selecting this major must complete at least 30 credits (maximum 45), including at least two 400-level courses. ITL 101, 102, and 111 may not be used toward the 30 credits required for the major.

Students may use up to three credits from ITL 391, 392, or 395 toward the 30 credits required for the major.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Journalism

The Department of Journalism offers the Bachelor of Arts (B.A.) degree.

Faculty: Professor Levin, *chairperson*. Professor Luebke; Assistant Professors Meagher and Moore; Lecturer Pantalone; Instructors Algier, Corey, Cyr, LaRoche, Lord, and Phipps; Adjunct Assistant Professors Markin and Ward.

The study and practice of journalism require the acquisition and application of a broad base of knowledge, so journalism majors at URI pursue a course of study that is strongly grounded in the liberal arts. Along with general education and elective courses from other disciplines, the major requires students to explore the concepts and professional practices of contemporary journalism in a diverse society. While studying the social, historical, legal, and ethical contexts of journalism, students also learn how to gather, synthesize, and critically assess factual information and communicate it clearly to a variety of audiences. Journalism “skills courses”—through individual and collaborative assignments—focus on reporting, writing, editing, and producing news. “Conceptual” courses provide students the intellectual foundation and framework to be responsible journalists. And through its general education course offerings, the Department of Journalism provides nonmajors a forum for studying the importance of journalism and the role of the mass media in society.

Students majoring in journalism must complete a minimum of 30 credits (maximum 45) in journalism. All journalism majors must complete JOR 115, 220, 310, 410, and 411. In addition, students must select nine credits from skills courses: JOR 230, 320, 321, 330, 331, 340, 341, 420, 430, 441, 442; and three credits from

conceptual courses: JOR 210, 211, 215, 311, 313, 415. Any journalism courses may be chosen for the remaining six credits. Students are encouraged to consult with their advisors about the mix of journalism courses that best meets their goals.

Journalism majors must fulfill some of their Basic Liberal Studies requirements by choosing from the following list of courses. The department has identified these courses as important preparation for students to both study and practice journalism.

Fine Arts and Literature (select one from each list) **List A:** ARH 120, 252; MUS 101; THE 100. **List B:** ENG 110, 241, 242, 251, 252; AAF/ENG 248; CLA/ENG 160. **Letters** (select one from each list) **List A:** HIS 142, 146, 150, 346; AAF 201. **List B:** PHL 103, 204, 212, 217; RLS 111. **Social Sciences** (select one from each list) **List A:** PSC 113, 288; CPL 200; ECN 100; GEG 104; PSC/SOC 274. **List B:** APG 203; SOC 240, 242; WMS 150. **Natural Sciences** Select one of the following *and* any course from the College of Arts and Sciences BLS Natural Sciences list (see page 49): AFS 210, 211; BIO 105; CHM 101, 102, 103, 105; PHY 111, 112, 185, 186. **Foreign Language/Cross-Cultural Competence** Students must meet the College of Arts and Sciences BLS Foreign Language/Cross-Cultural Competence requirements (see page 50). **Mathematical and Quantitative Reasoning** Select any course from the College of Arts and Sciences BLS Mathematical and Quantitative Reasoning list (see page 49). **English Communication** PHL 101 *and* complete any 3-credit WRT course from the College of Arts and Sciences BLS list (see page 49) with a grade of B or better.

The only journalism courses open to freshmen are JOR 110 (for nonmajors), 115 (for majors), and 220. Journalism majors are urged to concentrate on their Basic Liberal Studies requirements during their freshman and sophomore years. In addition to these required courses, other BLS courses are recommended as useful for journalism majors. Students should consult with their advisors about complete Basic Liberal Studies requirements and about other courses that meet their individual goals.

Students must earn a grade of C or better in a "skills" course (including JOR 220) to enroll in the next-level course. Only three credits of JOR 220 may be used to satisfy graduation requirements.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Journalism majors are transferred from University College to the College of Arts and Science upon completion of JOR 115 and JOR 220 with a grade of C or better.

Latin American Studies

The Departments of Sociology and Anthropology, History, and Modern and Classical Languages and Literatures offer a Bachelor of Arts (B.A.) degree in Latin American Studies (LAS). *As of June 2009, new admissions to this program have been suspended.*

Faculty: Professor Morín, *LAS committee chairperson.* *Committee members:* Professors Gititi and Poggie; Associate Professors de los Heros, Pegueros, and C. White; Instructor Pisa; Professor Emeritus McNab. (Some Arts and Sciences faculty members not listed here offer courses that can fulfill the requirement for this B.A.)

Students selecting this field must complete a minimum of 36 credits as follows: APG 315, HIS 381, 382, and one additional history course dealing with the major; six credits in Spanish or Portuguese from the approved list; LAS 397; PSC 201; ECN 363; and nine credits of electives from the approved list of courses.

Students must file their program of study with the dean's office.

Credits leading to this B.A. may also be taken at foreign universities or other universities in the U.S. that offer programs in Latin American studies with the approval of the LAS Committee, as long as 15 credits in the major are taken at URI. Students are highly encouraged to participate in study abroad programs in Latin America.

A list of courses acceptable for this program can be found on page 244. Courses not listed are not necessarily excluded

from this program, provided that the subject matter deals in some way with Latin America. The Latin American Studies Committee must approve the student's program including any course substitutions.

The LAS Committee will assist students in the formulation and approval of their programs. The current coordinator is Thomas Morín, associate professor of Hispanic studies in the Department of Modern and Classical Languages and Literatures.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Linguistics

The Department of Modern and Classical Languages and Literatures offers a number of undergraduate courses in linguistics. A minor in linguistics is also available.

Faculty: Professor K. Rogers, *section head.*

Mathematics

The Department of Mathematics offers a Bachelor of Arts (B.A.) degree and a Bachelor of Science (B.S.) degree. The department also offers the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees.

For information on URI's minor in mathematics, see the end of this section.

Faculty: Professor Eaton, *chairperson.* Professors Beauregard, Finizio, Grove, Kaskosz, Kulenovic, Ladas, Lewis, Merino, Montgomery, and Pakula; Associate Professors Baglama, Kook, Thoma, and Wu; Assistant Professors Comerford and Medina-Bonifant; Professors Emeriti Clark, Datta, Driver, Fraleigh, Roxin, Schwartzman, Suryanarayan, and Verma.

BACHELOR OF ARTS

Students in the B.A. curriculum may tailor a program to suit their individual needs and interests. They should meet with their advisor no later than the end of the first semester of the sophomore year to plan a complete program. This program,

and any subsequent changes in it, must be approved by the advisor and the department chairperson. It must contain at least 32 credits (maximum 45) in mathematics, and include MTH 141, 142, 215, 243, and 316, plus 15 or more additional credits in mathematics, at least three credits of which must be at the 400 level.

Credits earned in MTH * 107, 108, 109, 110, 111, 208, or 362, cannot be applied toward this degree.

A total of 120 credits is required in the B.A. curriculum. At least 42 of these must be in courses numbered 300 or above.

BACHELOR OF SCIENCE

Students in the B.S. curriculum may elect either the general program or the applied mathematics option. The Office of the Dean must be informed of any substitutions.

General Program. This program stresses basic theories and techniques, and includes an introduction to the principal areas of mathematics. It is recommended for students considering graduate study in mathematics. Students in this program must complete MTH 141, 142, 215, and 243. These courses should normally be taken in the freshman and sophomore years. Students must complete an additional 30 credits in mathematics, including MTH 316, 425, 435, 436, and 462. Credits earned in MTH *107, 108, 109, 110, 111, 208, 362, or 420 cannot be applied toward this degree.

Applied Mathematics Option. This program is intended for the student who anticipates a career as an applied mathematician or mathematical consultant with an organization such as an industrial or engineering firm or with a research laboratory. The student learns the mathematical ideas and techniques most often encountered in such work. Although a theoretical foundation is developed, the applications are emphasized. The student must take MTH 141, 142, 215, and 243, preferably by the end of the sophomore year. The student must complete an additional 18 credits in mathematics including one of the

sequences MTH 435, 436 or 437, 438, and nine credits from Group I (Mathematics). Also, the student must complete an additional four courses, one of which must be chosen from CSC 200, 201, 211, 212, PHY 410, or CHE 272, and three other courses chosen from Group II (Applications). At least nine math credits must be at the 400 level or above.

Group I: MTH 244, 316, 322, 418, 441, 442, 447, 451, 452, 462, 471, and 472. Other courses may be used for this group with prior permission of the chairperson.
Group II: *CHE 272, 313, 314; CHM 431, 432; CSC 340, 350, 440, 445; ECN 323, 324; ELE 313, 314, 322, 457; IME * 412, 432, 433; MCE 341, 354, 366, 372, 466; PHY 306, 322, 331, 410, 420, 451; STA 409, 412. Other courses may be used for this group with prior permission of the chairperson.

Both B.S. programs require 130 credits for graduation.*

MINOR IN MATHEMATICS

Students declaring a math minor must earn credit for MTH 141, 142, 215, and 243, and two three-credit math courses chosen from MTH 307, 316, 322, or any 400-level course. At least one of these two courses must be at the 400 level. Substitutions may be made with permission of the chairperson.

Military Science and Leadership (Army ROTC)

The Department of Military Science and Leadership (Army ROTC) is recognized as one of the best leadership programs in the country and is part of the University of Rhode Island curriculum. During classes and field training, students learn first-hand what it takes to lead others and motivate groups, as well as how to organize information to create executable tasks for others to follow. The experience is similar to being a vital manager in a corporation. Students learn to achieve success as team members or leaders in various situations.

Students may participate in the basic program (MSL 101, 102, 201, and 202) without obligation to the United States Army.

Students desiring a minor in Military Science and Leadership may request approval from the dean of the College of Arts and Sciences upon beginning the program. Completion of 18 credits of MSL course work is required to complete the minor.

Along with providing leadership training, Military Science and Leadership (Army ROTC) can pay for college tuition. Scholarships are awarded based on a student's merit and grades, not financial need. Two-, three-, and four-year scholarships covering full tuition and fees are available. Scholarship recipients also receive book money to cover the expense of textbooks, as well as a monthly allowance ranging from \$300 for freshmen to \$500 for seniors, to assist with room and board.

Faculty: Professor Wilson (Lt. Col., U.S. Army), *chairperson*. Assistant Professors MSG Ferrara, MAJ Kennedy, MSG Pitts, and CPT Poland.

Modern and Classical Languages and Literatures

The Department of Modern and Classical Languages and Literatures offers the Bachelor of Arts (B.A.) degree in classical studies, French, German, Italian, and Spanish (described in alphabetical order), as well as course work in Arabic, Chinese, modern Greek, Hebrew, Japanese, Portuguese, and Russian.

The department offers jointly with the Department of English the Bachelor of Arts (B.A.) degree in comparative literature studies (see page 55).

Faculty: Professor Morello, *chairperson*.

Music

The Department of Music offers a Bachelor of Arts (B.A.) degree with options in music, music history and literature, and jazz studies, and Bachelor of Music (B.M.) degrees in composition, music education,

* Please see "Addendum to 2009–2010 URI Catalog" for an addition or correction to this information.

and performance. Programs are also available leading to double majors in music with communication studies, elementary education, or psychology; and double degrees in music with computer science or business administration. The department also offers Master of Music (M.M.) degrees in music education or performance.

Faculty: Professor R. Lee, *chairperson*. Professors Dempsey, Kent, Ladewig, and Pollart; Associate Professors Conley, Danis, Parillo, and Takasawa; Assistant Professors Aberdam and A. Cardany; Professors Emeriti Gibbs and Livingston; Lecturers de la Garza, Frazier, and Thomas; Director of Athletic Bands and Lecturer B. Cardany; Guest Artists/Teachers Acosta, Berney, Buttery, Caufield, Ceo, Gates, Gendron, Hofbauer, Kiefer, Kim, Monllos, Murray, O'Connor, Platz, Porter, Sims, Sparks, Stabile, Uricco, Youmans, Zinno, and Zullinger; Music Resources and Facilities Coordinator Heroux; Concert Manager Devine, Preparatory Division Coordinator Murray; Coordinator of Music Education A. Cardany; Accompanists Beaton, Maxon-Carpenter, Uricco, and Zullinger; Piano Technician Flanders; Publicist and Editor Eastwood-Stokes and Tavares.

For information on the music minors, see the end of this listing.

BACHELOR OF ARTS

Students selecting music as a major have three options: *jazz studies*, *music*, or *music history and literature*.

Transfer credits in music theory, music history, and performance must be validated by placement examination.

Music majors interested in a career in communication studies and music may complete a second major in communication studies. Bachelor of Arts degree candidates in music can also complete a double major with psychology or elementary education. The music department offers a double degree combining music (B.A. degree) with computer science or business administration (B.S.). Contact the music department chair for more information.

Jazz Studies. Students selecting this option must complete 43 credits in musicianship and music performance as follows: *Musicianship:* MUS 119 (1) (fulfills URI 101 requirement), 120 (2), 121 (2), 122 (2), 225 (2), 226 (2), 424 (3), 106 (3), 221 (World Music Unit) (1), 222 (3), 322 (Jazz and Popular Music Units) (2), 280 (0), 480 (1). *Music Performance: A:* Six semesters of applied music study in the student's principal area of jazz instrumental performance, (MUS 110W, 210W, and 310W) at 2 credits per semester (12). A successful audition is required prior to study in the principal applied area of jazz instrumental performance. Applied study for the B.A. in music with a jazz option is limited to the following instruments: saxophone, trumpet, trombone, piano, string bass, guitar, and drum set. **B:** Two semesters of major ensembles MUS 291, 292, 293, 394, 395, 397, and 398G (2). **C:** Two semesters of MUS 391 (2) and three semesters of MUS 396 or 398J (3). A successful audition is required prior to participation in jazz ensembles. **D:** MUS 350 with emphasis on jazz styles (0). **E:** Seven semesters of MUS 300 (0). *Electives:* 38 credits, of which a minimum of 30 must be in non-music courses. The department recommends that eight credits of electives be taken in music. At least six of these should be in upper-division music courses. Students who are deficient in keyboard skills must take MUS 171 (1) and 172 (1). MUS 171 and 172 may count as two of the recommended music electives.

A minimum of 120 credits is required for graduation. At least 42 of these credits must be in courses at the 300 level or above.

Music. Students selecting this option must complete 36 credits in musicianship and performance as follows: *Musicianship:* MUS 119 (1); 120, 121, 122, 225, 226, 227, 228 (14); 221, 222 (6); 322 or upper-division music history course (3); 280 (0) and 480 [capstone] (1). Students who are deficient in keyboard skills must take MUS 171 (1). *Performance:* four semesters of the principal applied music area, at two credits per semester (8); three semesters of ensembles

appropriate to the principal applied music area, MUS 291, 292, 293, 394, 395, 396, 397, or 398G (3); seven semesters of MUS 300 (0). A successful audition is required prior to study in the principal applied music area. *Electives:* 45 credits, of which a minimum of 30 credits must be in non-music courses. The department strongly recommends that 15 credits of electives be taken in music. At least six of these credits should be in upper-division music courses.

A minimum of 120 credits is required for graduation. At least 42 of these must be at the 300 level or above.

Music History and Literature. Students choosing this option must complete 43 credits in musicianship and performance, as follows: *Musicianship:* MUS 119 (1); 120, 121, 122, 225, 226, 227, 228 (14); 221, 222, 322 (9); three upper-division music history courses (9); 280 (0) and 480 [capstone] (1). Students who are deficient in keyboard skills must take MUS 171 (1). *Performance:* four semesters of the principal applied music area, at two credits for two semesters and one credit for two semesters (6); three semesters of major ensembles appropriate to the principal applied music area MUS 291, 292, 293, 394, 395, 396, 397, or 398G (3); seven semesters of MUS 300 (0). A successful audition is required prior to study in the principal applied music area. *Electives:* 38 credits, of which a minimum of 30 must be in non-music courses. The department strongly recommends that eight credits of electives be taken in music. At least six of these credits should be in upper-division music courses. *Other:* nine credits of foreign language and proficiency through 103 in either French or German.

A minimum of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

BACHELOR OF MUSIC

Students selecting the Bachelor of Music degree program have three options: *music composition*, *music education*, or *music performance*.

Students can be admitted to the B.M. degree program only after a successful audition in the principal applied music area and should contact the Department of Music for specific requirements. Transfer credits in music theory, music history, and performance must be validated by placement examination.

All Bachelor of Music students must successfully complete Option I or Option II of the piano proficiency requirement. In Option I, students must pass all seven piano proficiencies by the end of their junior year. Piano proficiency examinations before the faculty examination committee are scheduled on a regular basis during the fall and spring semesters. In Option II students take MUS 171, 172, 271, and 272 and successfully pass each course with a grade no lower than a C. Failure to pass either option will require re-examination in succeeding semesters. The B.M. degree will not be granted until this requirement is fulfilled.

Students selecting Option I will need to demonstrate the following seven piano proficiencies: 1) *nomenclature*, answering questions which deal with nomenclature concerning the piano as well as nomenclature which may concern tempo, dynamics, and/or other musical elements; 2) *scales*, performing all major scales two octaves, hands together, by memory at a tempo of M.M.=144 per note; 3) *harmonizing at sight*, by reading two melodies taken from any major or minor key chosen by the examination committee, improvising suitable accompaniments for the melodies by using diatonic triads and secondary dominants, and reading from chord symbols; 4) *transposition*, by transposing at sight two melodies selected by the examination committee; students will be asked to transpose the melodies up or down by either a half step or whole step; 5) *patriotic songs*, by playing *America* and *The Star-Spangled Banner* in a manner suitable for accompanying community or school singing; these accompaniments are to be prepared in advance; 6) *sight-read accompaniments*, by playing at sight a four-part song and an accompaniment for a vocal or instrumental soloist;

and 7) *repertoire*, by playing two prepared piano pieces by contrasting composers; each piece must be approved in advance by a member of the piano faculty or an instructor of class piano.

No student should participate in more than three major ensembles in a single semester.

In addition, students select one of the following options.

Music Composition. Students selecting the music composition option must complete seven semesters of applied composition (MUS 110V, 210V, 310V, 410V), one or two credits per semester (10); seven semesters of the principal applied music area, two credits per semester (14); seven semesters of MUS 300 (0); and four semesters of secondary applied music areas, one credit per semester (4); MUS 171 and 172 are required as secondary applied music areas if students select piano proficiency option II. Students who have not passed the piano proficiency examination by the end of MUS 172 will be expected to take MUS 271 and 272, which can count as secondary applied music areas. Other secondary applied credits as needed must come from MUS 110–410 (in an applied area other than the principal applied music area) or MUS 169, 170, 173, 175, 177, or 179. Also required are six semesters of major ensembles MUS 292, 293, 394, 395, or 397 appropriate to the principal applied music area (6). For the studio composition specialization, credits in MUS 396 may be included. Also required are MUS 119 (1); MUS 120, 121, 122, 225, 226, 227, 228, 416 (17); 221, 222, 322 (9); 235 (2) and 311 (2); 417, 420, and 421 (9) (for students wishing to specialize in studio composition, three credits of MUS 424 may be substituted for MUS 420); an upper-division music history course (3); MUS 450 Senior Composition Recital [capstone] (0); MUS 280 (0) and 480 [capstone] (2); and six credits of electives, at least three of which should be in upper-division music courses.

A minimum of 124 credits is required for graduation.

Music Education. See pages 41 and 107 for admission requirements for teacher education programs. Completing all requirements in the music education option leads to an initial teaching certificate for music in grades K–12. Students selecting this option must complete 89 credits in *Studies in Music* and *Professional Education*, as follows:

Studies in Music (64 credits): seven semesters of the principal applied music area (instrument or voice must be selected from MUS 110–410 A–U only; applied study in jazz as the principal applied music area is not acceptable for the music education option), two credits per semester (14). Seven semesters of MUS 300 (0); senior recital MUS 450 [capstone] (0). Four semesters of secondary applied music areas, one credit per semester (4); MUS 171 and 172 are required as secondary applied music areas if students select piano proficiency option II. Students who have not passed the piano proficiency exam by the end of MUS 172 will be expected to take MUS 271 and 272, which can count as secondary applied music areas. Other secondary applied credits as needed must come from MUS 110–410 (in an applied area other than the principal applied music area) or MUS 169, 170, 173, 175, 177, or 179. Seven semesters of major ensembles appropriate to the principal applied music area, at 0–1 credit per semester (6). Major ensembles include MUS 292, 293, 394, 395, and 397; no more than two semesters of MUS 291 and/or 396 can count toward the major ensemble requirement. MUS 119 (1); 120, 121, 122, 225, 226, 227, 228 (14); 416 or 417 (3); 221, 222, 322 (9). MUS 169, 170, 173, 175, 177, 179 at a minimum of one credit each (6); 235 (2); 311, 312 (5).

Professional Education (25 credits): Students pursuing the music education option must apply for admission to the Office of Teacher Education in the School of Education; see pages 41 and 42 for admission requirements. MUS 280 (0), 480 [capstone] (2); MUS 238, 339, 340, 341 (10); EDC 250 (1), 484 (12). PSY 113 (3) is required as a *Professional Education* course but also counts to-

ward the Social Science requirement in the Basic Liberal Studies program. The piano proficiency examination Options I or II, the Praxis II: Principles of Learning and Praxis II: Music Content Knowledge, and all courses required for the music education option, with the exception of MUS 480 [capstone], must be completed before supervised student teaching (EDC 484). The passing score for Praxis II: Principles of Learning is 167, and for Praxis II: Music Content Knowledge is 153. Students may wish to enroll in EDC 312 (3) in order to prepare the Praxis II: Principles of Learning.

A minimum of 128 credits is required for graduation.

Music Performance. All students in the music performance option must take the following music courses: eight semesters of MUS 300 (0); MUS 350 (0) and 450 [capstone] (0); MUS 119 (1); 120, 121, 122, 225, 226, 227, 228, 416 (17); 221, 222, 322 (9). MUS 235 (2) and 442 (2); 311 (2); 280 (0); 480 [capstone] (2).

A minimum of 124 credits is required for graduation. In addition, students must select one of the following five sub-options.

Classical Guitar: eight semesters of the principal applied music area. Two semesters of MUS 110T at two credits in the first semester and three credits in the second (5); two semesters of MUS 210T at three credits each (6); two semesters of 310T and 410T at four credits each (16). MUS 171 and 172 (2). Students who have not passed the piano proficiency examination by the end of MUS 172 will be expected to take MUS 271 and 272. Four semesters of major ensembles MUS 292, 293, 394, 395, 396, or 397 (4). Four semesters of guitar ensemble (MUS 398G) and three semesters of playing guitar in chamber music ensembles (MUS 398) (7). An upper-division music history course (3); an upper-division music theory course (3). Four credits of electives, at least three of which should be in upper-division music courses.

Jazz (limited to saxophone, trumpet, trombone, piano, guitar, string bass, and drum set): eight semesters of the principal jazz applied music area. Two semesters of MUS

110W at two credits in the first semester and three credits in the second (5); two semesters of MUS 210W at 3 credits each (6); two semesters of 310W and 410W at four credits each (16). MUS 171 and 172 (2). Students who have not passed the piano proficiency examination by the end of MUS 172 will be expected to take MUS 271 and 272. Four semesters of major ensembles MUS 291, 292, 293, 394, 395, or 397 (4). Two semesters of jazz studio ensemble (MUS 396), two semesters of jazz studio lab (MUS 391), and four semesters of chamber music ensembles/jazz (MUS 398I) (8). An upper-division music history course or an upper-division music theory course (3). Three credits of electives which should be in upper-division music courses.

Orchestral Instrument: eight semesters of the principal applied music area. Two semesters of MUS 110 at two credits in the first semester and three credits in the second (5); two semesters of MUS 210 at three credits each (6); two semesters of 310 and 410 at four credits each (16). MUS 171 and 172 (2). Students who have not passed the piano proficiency examination by the end of MUS 172 will be expected to take MUS 271 and 272. Eight semesters of major ensembles MUS 292, 394, or 397 (8). Three semesters of secondary or chamber music ensembles (3). An upper-division music history course (3); an upper-division music theory course (3). Four credits of electives, at least three of which should be in upper-division music courses.

Piano or Organ: eight semesters of the principal applied music area. Two semesters of MUS 110B or C and 210B or C at three credits each (12); two semesters of 310B or C and 410B or C at four credits each (16). All students pursuing this sub-option must pass the piano proficiency examination by the end of the second semester of the junior year. Keyboard majors can waive MUS 171, 172, 271, and 272, courses normally taken to develop the skills necessary to pass the piano proficiency examination. Four semesters of major ensembles MUS 292, 293, 394, 395, or 397 (4). Six semesters of piano accompanying (MUS 371) or playing

piano in chamber music ensembles (MUS 398) (6). MUS 420 (3). An upper-division music history course (3). Six credits of electives, at least three of which should be in upper-division music courses.

Voice: eight semesters of the principal applied music area. Two semesters of MUS 110A at two credits in the first semester and three credits in the second (5); two semesters of MUS 210A at three credits each (6); two semesters of 310A and 410A at four credits each (16). MUS 171, 172, 271, and 272 (4). Eight semesters of major ensembles MUS 293 or 395 at zero or one credit per semester (7). Two semesters of chamber or other music ensembles (2). MUS 283 (3). Four credits of electives, at least three of which should be in upper-division music courses.

Students selecting voice must also take nine credits of foreign language in two or more languages. This requirement may be modified or satisfied by advanced placement.

MINORS IN MUSIC

Jazz Studies. Students who wish to declare a minor in music using the jazz studies option must complete 19 credits in musicianship, performance, and electives as follows: Musicianship: MUS 106 (3), 120 (2), 121 (2), 122 (2), 171 (1), 221 (World Music Unit) (1), 322 (Jazz and Popular Music Units) (2), and MUS 300 for a minimum of two semesters (0). Music Performance: a minimum of four credits in the principal applied music area (MUS 110W, 210W, at one or two credits per semester) (4), and two semesters of MUS 391, 396, or 398J (2). Applied study in MUS 110W and 210W for the minor in jazz option is limited to the following instruments: saxophone, trumpet, trombone, piano, bass, guitar, and drum set. *Electives:* The department strongly suggests that 3 credits be taken in MUS 101. Participation in other major ensembles is also encouraged. Major ensembles include MUS 291, 292, 293, 394, 395, 397, and 398G, pending audition. A successful audition is required prior to study in the

principal applied music area and prior to participation in ensembles.

Music. This option gives students a broad-based background in music. Course work in this option is similar to that taken by students starting work toward a B.A. or B.M. degree in music. Students who wish to declare a minor in music using the music minor option must earn credit for MUS 111 (3) or 120 (2); 171 (1), 121 and 122 (4), 300 for a minimum of two semesters (0), and two 3-credit music history and literature courses selected from MUS 221, 322, 408, 430, 431, 433, 434 (or 222, if the student has the additional pre-requisites) (6). Additionally, students must earn a minimum of four credits in their principal applied music area (MUS 110–410, at one or two credits per semester) and four credits in major ensembles* appropriate to the principal applied music area (8). The minimum number of credits required for this option is 21–22. Students must pass an audition in their principal applied music area prior to registration for applied study in voice or on an instrument.

Music Performance. This option gives students the opportunity for a more concentrated study in voice or on an instrument. Students who wish to declare a minor in music using the music performance minor option must earn credit for MUS 111 (3) or 120 (2); MUS 121 and 122 or a music history course selected from MUS 101, 106, 221, 322, 408, 430, 431, 433, 434 (3–4); MUS 300 for a minimum of two semesters (0). Additionally, students must earn a minimum of eight credits in their principal applied music area (MUS 110–410 at one or two credits per semester) and six credits in major ensembles* appropriate to the principal applied music area (14). The minimum number of credits required for this option is 19–21. Students must pass an audition in their principal applied music area prior to registration for applied study in voice or on an instrument.

Individual Music. This option gives students more flexibility. These students design and develop their music minor program

under the advisement and sponsorship of a full-time music faculty member. Petitions outlining and justifying the desired music minor program must be presented by the faculty sponsor to the music faculty for approval. A minimum of 18 credits is required. Petitions should be submitted as early as possible in a student's undergraduate program.

**Music ensembles include MUS 291, 292, 293, 394, 395, 396, and 397. Up to one semester of MUS 291 can count toward the major ensemble requirement in the music minor option; up to two semesters of MUS 291 can count toward the major ensemble requirement in the music performance option. Those with a major applied area in guitar can count MUS 398 for guitar ensemble as a major ensemble. Those with a major applied area in piano can count additional applied music credits (MUS 110–410) and/or accompanying (MUS 371) in lieu of the major ensemble requirements.*

Philosophy

The Department of Philosophy offers a Bachelor of Arts (B.A.) degree.

Faculty: Professor Zeyl, *chairperson.* Professors Foster, Johnson, Pasquerella, J. Peterson, and Wenisch; Assistant Professors Krieger, Meghani, and Mollgaard; Professors Emeriti Y. Kim and Schwarz.

Students selecting this major must complete no fewer than 33 credits (maximum 48) in philosophy. Students are required to take PHL 205; at least one from PHL 101, 451 (logic); at least one from PHL 212, 314 (ethics); at least one from PHL 341, 342, 452; both PHL 321 and 323; at least one from PHL 204, 318, 324, 346; and PHL 490 [capstone]. The remaining nine credits may be chosen freely from the list of PHL courses offered by the department. At least 18 credits in course work must be at the 300 level or above.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Physics

The Department of Physics offers a Bachelor of Arts (B.A.) degree and a Bachelor of Science (B.S.) degree. The department also offers the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees.

Faculty: Professor Northby, *chairperson.* Professors Heskett, Kahn, Kaufman, Malik, Meyerovich, Muller, Nightingale, Nunes, and Steyerl; Assistant Professors Andreev and Reshetnyak; Adjunct Professors Kemp, McCorkle, and Yoon; Adjunct Associate Professors Bozyan, Karbach, and Ruffa; Adjunct Assistant Professor Briere; Professors Emeriti Desjardins, Hartt, Letcher, Penhallow, Pickart, Stone, and J. Willis.

BACHELOR OF ARTS

As of June 2009, new admissions to this program have been suspended.

Students selecting this program must complete a minimum of 41–42 credits (maximum 45) in physics, mathematics, and computer science, including PHY 203, 204, 205, 273, 274, 275 (12), 306 (3), 322 (3), 331 (3), 381, 382 (6), 401 or 402 (1), 451 (3), 491 or 492 (3), MTH 244 (3), CSC 211 (4), and one course from PHY 410 or CSC 212 (3–4). It is strongly recommended that students take MTH 141 and 142 in the freshman year.

Students in this program are encouraged to broaden their opportunities by using the block of electives to minor in business, education, engineering, medicine and molecular biology, language, or other physics-related interdisciplinary areas as listed under the B.S. program.

A total of 120 credits is required for the B.A. At least 42 of these must be in courses numbered 300 or above.

For students completing both the B.A. in physics and the B.S. in electrical engineering at the same time, the requirements of CSC 211, PHY 331, and PHY 410 for the physics majors are waived.

For students completing both the B.A. in physics and the B.S. in mechanical engineering at the same time, the requirements of CSC 211 and PHY 410 for the physics majors are waived.

Students in both of the above groups (B.A. physics/B.S. electrical engineering and B.A. physics/B.S. mechanical engineering completing both degrees at the same time) may use one course in physics toward fulfilling the Natural Sciences Basic Liberal Studies requirement.

BACHELOR OF SCIENCE

This curriculum provides a general background in both theoretical and experimental physics. It forms a foundation for further study at the graduate level toward an advanced degree, and also prepares the student for a career as a professional physicist in industry or government. Initiative, independent solution of laboratory problems, and research are encouraged in the advanced laboratory courses.

In addition to the major, students are encouraged to use the large block of elective credits to develop a program of study as a minor (described on page 35) in applied or interdisciplinary fields, such as acoustics, geophysics, optics, energy, astronomy/astrophysics, atmospheric science, computational physics, mathematical physics, physics education, chemical physics, ocean physics, engineering physics, business, education, medicine and molecular biology, and languages. As with any minor, it will be recorded on the student's final transcript.

The following courses are required for the B.S., but exceptions and/or substitutions are possible and can be arranged by consulting the department chairperson.

A total of 129 credits is required for graduation. PHY 483 and 484 are the **capstone** courses in this program.

Freshman Year

First semester: 17 credits

MTH 141 (4); PHY 203, 273 (4), Basic Liberal Studies requirements and electives (9).

Second semester: 16 credits

MTH 142 (4); PHY 204, 274 (4), Basic Liberal Studies requirements and electives (8).

Sophomore Year

First semester: 17 credits

CSC 211 (4); MTH 243 (3); PHY 205, 275 (4), Basic Liberal Studies requirements and electives (6).

Second semester: 17 credits

MTH 244 (3); PHY 306 (3), 410 (3), Basic Liberal Studies requirements and electives (8).

Junior Year

First semester: 17 credits

PHY 322 (3), 381 (3); MTH 215 (3), Basic Liberal Studies requirements and electives (8).

Second semester: 17 credits

Mathematics elective at the 300 or 400 level (3), PHY 331 (3), 382 (3), Basic Liberal Studies requirements and free electives (8).

Senior Year

First semester: 13 credits

PHY 401 (1), 420 (3), 451 (3), 483 [**capstone**] (3), Basic Liberal Studies requirements and free electives (3).

Second semester: 15 credits

PHY 452 (3), 455 (3), 484 [**capstone**] (3), 510 (3), Basic Liberal Studies requirements and electives (3).

Physics and Physical Oceanography

The Department of Physics and the Graduate School of Oceanography offer a Bachelor of Science (B.S.) degree in physics and physical oceanography.

Coordinators: Professors Heskett and Muller (Physics). The faculty consists of the members of the Department of Physics and the GSO's physical oceanography faculty.

This program includes a comprehensive background in physics and a solid introduction to physical oceanography. The

curriculum includes a full set of physics and mathematics courses required for a B.S. in physics, with extra emphasis on classical physics, plus additional upper-division or graduate-level courses in fluid dynamics and physical oceanography.

The senior physics research project (PHY 483 and 484) will be undertaken in the Graduate School of Oceanography under the supervision of a GSO faculty member. In addition, students may find summer employment or participate in oceanographic research cruises after their junior year.

Students graduating in this course of study are well prepared to pursue careers in conventional physics or physical oceanography. Technical positions in private or government oceanographic research laboratories are available for physical oceanographers at the B.S. level. Students who continue on to graduate studies should expect to find high demand for physical oceanographers with advanced degrees. It is recommended that students planning to attend an oceanography graduate school take PHY 520 (Classical Dynamics); students wishing to keep open the option of physics at the graduate level should take PHY 452 (Quantum Mechanics). Students entering the URI Graduate School of Oceanography from this program will have a significant head start compared to those entering from most other undergraduate institutions.

A total of 129 credits is required for graduation.

Freshman Year

First semester: 17 credits

MTH 141 (4); OCG 110 (3); PHY 203, 273 (4), Basic Liberal Studies requirements and electives (6).

Second semester: 16 credits

CHM 101, 102 (4); MTH 142 (4); OCG 123 (4); PHY 204, 274 (4).

Sophomore Year

First semester: 17 credits

CSC 211 (4); MTH 243 (3); PHY 205, 275 (4), Basic Liberal Studies requirements and electives (6).

Second semester: 17 credits

MTH 244 (3); PHY 306 (3); 410 (3), Basic Liberal Studies requirements and electives (8).

Junior Year

First semester: 17 credits

PHY 322 (3), 381 (3); MTH 215 (3), Basic Liberal Studies requirements and electives (8).

Second semester: 17 credits

MCE 354 (3); PHY 331 (3), 382 (3), Basic Liberal Studies requirements and electives (8).

Senior Year

First semester: 16 credits

OCG 501 (3); PHY 401 (1), 420 (3), 451 (3), 483 (3), Basic Liberal Studies requirements and electives (3).

Second semester: 12 credits

OCG 510 (3); PHY 425 (3), 484 (3), and 510 (3).

Political Science

The Department of Political Science offers the Bachelor of Arts (B.A.) degree. The department also offers the Master of Arts (M.A.) in political science and the Master of Public Administration (M.P.A.).

Faculty: Professor Tyler, *chairperson*.

Professors Hamilton, Hennessey, Killilea, Moakley, Petro, and Rothstein; Associate Professor Krueger; Assistant Professors Hutchison, Johnson, and Pearson-Merkowitz; Professors Emeriti Leduc, Stein, Wood, and Zucker.

The Major. Students selecting this field must complete a minimum of 32 credits (maximum 46) in political science, including PSC 113 (4), 116 (4), 212 (4), and either 210 or 211 (4). Student must select one 300-level experiential course (4) and two 400-level reearch seminars (4 each).

Students completing both the B.A. degree in political science and the B.S. degree in engineering at the same time may

use courses in the political science major to satisfy Basic Liberal Studies requirements for the Bachelor of Arts. The College of Engineering and the Department of Political Science have established a curriculum that allows for the completion of the two degrees and a public-sector internship in five years.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

The Minor. Students declaring a minor in political science must earn 20 credits including PSC 113 (4), 116 (4), either 210 or 211 (4), and any two other political science courses at the 300 level.

Minor in International Relations. See page 37.

John Hazen White Sr. Center for Ethics and Public Service. An important part of URI's Political Science Department, this center was established in 1994 through a grant from John Hazen White Sr., a local businessman and philanthropist. The center offers ethics and public service programs for undergraduate and graduate students, elected and appointed officials, public managers, and citizen groups. In addition to research opportunities, workshops, and special programs, the center also sponsors the Mentor/Tutor Internship (MTI), which provides URI students internships, for credit, in local public schools to encourage and mentor students at risk of dropping out. See Professor Alfred Killilea for more information.

Portuguese

The Department of Modern and Classical Languages and Literatures offers a number of undergraduate courses in Portuguese.

Psychology

The Department of Psychology offers the Bachelor of Arts (B.A.) degree. The department also offers the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees.

Faculty: Professor Morokoff, *chairperson*. Professors Boatright-Horowitz, Biller, Brady, J.L. Cohen, Collyer, de Mesquita, Faust, Florin, Gorman, Harlow, LaForge, Park, Prochaska, Quina, Rossi, Stevenson, Stoner, Velicer, Willis, and Wood; Associate Professors Flannery-Schroeder, S. Harris, Robbins, Rogers, L. Stein, Walls, and Weyandt; Assistant Professor Loftus; Professors Emeriti Grebstein, Gross, A. Lott, B. Lott, Merenda, Silverstein, N. Smith, Valentino, Vosburgh, and Willoughby.

In order to transfer from University College to Arts and Sciences as a psychology major (or to be coded as such in the College of Arts and Sciences), a student must have a C or better in PSY 113; a C average in two of the following courses: PSY 232, 235, and 254; and a C in PSY 300.

Psychology majors are required to complete a minimum of 31 (maximum 46) credits in psychology courses to be distributed as follows: PSY 113 (with a grade of C or better); a minimum of two courses from PSY 232, 235, and 254 (with a C average); both PSY 300 and PSY 301 (with a grade of C or better in each); a minimum of three topics courses (9 credits) from PSY 255, 310, 335, 361, 381, 384, 385, 399, 432, 434, 436, 442, 460, 464, 470, 479, and 480 (the average in the three courses must be C or better); a minimum of one course (3 credits) in the applied knowledge area to be selected from PSY 103, 261, 275, 334, 399, 465, 466, 471, and 478 (with a C or better); a minimum of one course (at least three credits) from the experiential practice and/or internships area selected from PSY 305, 371, 473, 489, 499; ITR 301, 302, with a C or better in graded courses or a satisfactory in S/U courses.. A minimum of 31 graded psychology (PSY) credits (not S/U) are required for the additional psychology major. Once 46 credits in psychology courses are taken, additional psychology credits will not count toward the 120 total credits required for graduation.

Students who must repeat a course to meet the minimum grade requirement may use only three credits of that particular course toward graduation.

Students majoring in psychology typically go on either to pursue a career at the B.A. level or study for an advanced degree. In both cases, students should consult the department's Web site (uri.edu/artsci/psy) and their academic advisor to select appropriate courses for their interests and goals.

A total of 120 credits is required for graduation. At least 42 of these credits must be in courses numbered 300 or above.

Public Relations

The Departments of Communication Studies and Journalism offer the Bachelor of Arts (B.A.) degree in public relations.

Coordinator: Regina Bell, Communication Studies.

This interdepartmental major combines a liberal arts education with the skills important to a career in public relations. Working with an advisor from Communications Studies or Journalism, students will develop a specific program of studies.

Students must complete the following courses before being accepted into the major: COM 202, 210; JOR 220 (with a C or better). Based on grade point average, only the top 25 applicants will be admitted annually. The major requires a minimum GPA of 2.00 overall and 2.50 in the pre-major courses. Apply in February.

The major requires 33 credits including PRS 340, 441, 491; COM 381; JOR 341 (15). Students must complete six courses (18 credits) from the following including at least one course from each category—*Category A:* JOR 321, WRT 201, 235, 302, 303, 304, 333; *Category B:* BUS 365, 465, 468; *Category C:* COM 302, 351, 415, 450; *Category D:* COM 415; JOR 410, 442; PSY 335. A student must maintain a 2.00 grade point average in her or his major to meet graduation requirements.

A total of 120 credits is required for graduation. At least 42 of these must be at the 300 level or above.

A minor is also available (see page 39).

Russian

The Department of Modern and Classical Languages and Literatures offers a number of undergraduate courses in Russian.

Sociology

The Department of Sociology and Anthropology offers the Bachelor of Arts (B.A.) degree and the Bachelor of Science (B.S.) degree in sociology.

Faculty: Professor Loy, *chairperson*. Professors Carroll, Cunnigen, Mederer, Peters, and Travisano; Associate Professors Costello and Van Wyk; Assistant Professor Doerner; Instructor Pisa; Professor Emerita Reilly.

BACHELOR OF ARTS

Students selecting this curriculum must complete a minimum of 30 credits (maximum 45) in sociology, including SOC 100, 301, 401, 495 [**capstone**], and two courses selected from SOC 240, 242, 336, 413, 428, and 452. At least 18 of the 30 credits must be at the 300 level or above. No more than six credits in independent study and/or field experience courses may be used toward the 30 credits required for the major. SOC 495 is to be taken during the senior year. (See page 52 for a description of the anthropology major.)

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

In order to transfer into the sociology B.A. program from University College, a student must have completed at least 24 credits and have earned a minimum of a 2.00 GPA.

BACHELOR OF SCIENCE IN SOCIOLOGY

Students in this curriculum elect either the Criminology and Criminal Justice option or the Organizational Analysis option and must notify the dean's office of the chosen option.

SOC 476 is the **capstone** course for the Criminology and Criminal Justice option. SOC 495 is the **capstone** course for the Organizational Analysis option.

Criminology and Criminal Justice Option.

A minimum of 30 credits in sociology is required including SOC 100, 230, 274, 301, 370, and 476 (18); two courses selected from SOC 240, 242, 336, 375, 403, 413, 428, and 452 (6); and four courses selected from SOC 330, 331, 420, and 497, and when appropriate and approved by the department chairperson, SOC 300, 498, and 499. No more than six credits in independent study and/or field experience may be used toward the 30 credits required for the major. In addition to the required courses, students selecting this option are strongly encouraged to take PSC 288 and PSC 472.

Admission to this option is selective.

Applications for admission will be reviewed twice each year, usually on or about October 1 and March 1. Students must apply by the end of September or February by submitting their names to the University College advisor for sociology or to the chairperson of the Department of Sociology and Anthropology. To be considered for the Criminology and Criminal Justice option, students must have earned a minimum of 30 credits, including SOC 100, 230, and 274 by the application deadline, and must have earned an overall GPA of at least 2.50. Preference for admission will be given to those individuals with the highest grade point averages.

A total of 120 credits is required for graduation.

Organizational Analysis Option. A minimum of 30 credits in sociology is required including SOC 100, 301, 320, 350, 401, 495 (12); and six credits in sociology at the 300 level or above. No more than six credits in independent study and/or field experience courses may be used toward the 30 credits required for the major. In addition, students selecting this option must complete ECN 201 and 202 (6); MTH 111 (3); STA 308 and 412* (6); CSC 201* (4); WRT

333 (3); BUS 340, 341, 343, 345, 442, and either BUS 315 or BUS 443 or BUS 448 (18).

*Note: BUS 210 and 212 may be substituted for STA 308 and 412; and BUS 110 may be substituted for CSC 201 if these courses are already completed when the student transfers into the B.S. program.

Admission to this option is open to only 15 students per graduating class. Applications for admission will be reviewed only once each year, usually on or about March 1. Students must apply by the end of February by submitting their names to the University College advisor for sociology or to the chairperson of the Department of Sociology and Anthropology. To be considered for the organizational analysis option, students must have earned a minimum of 45 credits by the application deadline and must have at least a 2.00 grade point average. Preference for admission will be given to those individuals with the highest grade point averages.

A total of 120 credits is required for graduation.

Spanish

The Department of Modern and Classical Languages and Literatures offers the Bachelor of Arts (B.A.) degree with a major in Spanish. The department also offers the Master of Arts (M.A.) program in Spanish.

Faculty: Professor Manteiga, *section head*. Professors Morín, Trubiano, and White; Associate Professor de los Heros; Assistant Professor Echevarria; Professor Emeritus Gitlitz.

For the Spanish major, students will complete a minimum of 30 credits (maximum 45), including SPA 325 and three 400-level courses (excluding SPA 421). SPA 421 may be used as part of the remaining 18 required credits. Note: SPA 101, 102, 321, 391, 392, and 393 cannot be counted toward the Spanish major. Students may also include LIN 202 and 220, and—with permission of the advisor, section head,

department chairperson, and dean—up to two courses in allied fields such as history, art, and anthropology. These requirements are the same for the secondary education major.

A summer field workshop (SPA 310) in Spain or Spanish America is occasionally offered for three to six credits. For information, see the section head.

Students in the International Engineering Program or the International Business Program must take SPA 312, 316, 317, 321, 325, and a 400-level engineering or business course taught in Spanish, designated SPA 412 for engineering students and SPA 421 for business students. IEP or IBP students beginning their study of Spanish at the 200 level or higher may opt to take up to six credits of Portuguese toward the completion of the major in Spanish. IEP or IBP students do not have to take three 400-level courses in Spanish, but must take at least one 400-level literature course in Spanish. Note: SPA 101, 102, 391, 392, and 393 cannot be counted toward the major for IEP or IBP students. The 6-credit Portuguese option is available to IEP and IBP students only. Students simultaneously completing the International Engineering Program or the International Business Program and the B.A. with a major in Spanish may also use three credits of Spanish literature toward the Fine Arts and Literature Basic Liberal Studies requirement. In addition, students in these programs are exempt from the one-course-per-discipline rule in Letters, Social Sciences, and Natural Sciences.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

Statistical Science

Minor in Statistics. Students who wish to declare a minor in statistics must earn credit for STA 409 (3), 412 (3), MTH 451 (3), and three three-credit statistics courses chosen with prior approval of the chairperson of the Department of Computer Science and Statistics.

Theatre

The Department of Theatre offers a Bachelor of Fine Arts (B.F.A.) degree.

Faculty: Associate Professor McGlasson, *chairperson*. Professor J. Swift; Associate Professors Howard, Wittwer, and Wortman; Lecturer Hawkridge.

Productions at URI cover the range of theatre forms, ancient to modern, with an emphasis on contemporary and experimental work. All members of the University community may participate in productions.

The criteria used to transfer students out of University College into the Department of Theatre are 24 credits and a 2.00 GPA.

BACHELOR OF ARTS

Enrollment in this program is currently suspended with the exception of students enrolled in the elementary education program. Elementary education students who do not complete the elementary education program must switch to the B.F.A. program in order to earn a degree in theatre.

Students must fulfill the elementary education requirements as well as a total of 33 credits (maximum 48) as follows: THE 111 (3), 161 (3), 181 (3), 221 (3), 250 (3), 261 (3), 307 (3), 321 (3), 381 and 382 (6), 383 or 384 or 481 (3). Potential B.A. candidates are urged to complete THE 111, 112, 161, and 181 by the end of their freshman year. B.A. candidates may elect up to 15 more credits in theatre with the approval of their department advisor.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above.

BACHELOR OF FINE ARTS

The B.F.A. program is intended for highly motivated students who wish their education to emphasize a major theatrical field of interest. The program offers concentrated study in acting, design and theatre technology, directing, and stage management. Specific requirements of these areas are flexible to suit students' individual needs.

All B.F.A. students are required to complete 37 credits in core courses distributed as follows: THE 111 (3), 161 (3), 181 (3), 221 (3), 250 (3), 261 (3), 291 (2), 321 (3), 351 or 352 (3); three courses from 381 (3), 382 (3), 383 or 384 or 481 (3) to total nine credits; and 391 (2). All B.F.A. candidates are urged to select a course from ENG 362, 366, 446, or 472, and to complete THE 111, 161, and 181 by the end of their freshman year.

In addition to the core requirements, each student selects one of the following specializations. Students must notify the office of the dean of the area of specialization they have selected. B.F.A. students selected for an internship program may substitute up to 12 credits for theatre courses in their area of specialization, subject to departmental approval. Transfer students, late entries into the theatre major, and others wishing to modify this schedule of B.F.A. requirements may do so in consultation with their faculty advisor and with permission of the department chairperson.

Acting. These students must complete an additional 40 credits: THE 112 (3), 211 and 212 (6), 213 and 214 (2), 300 or 301 (3), 311 and 312 (6), 313 and 314 (2), 350 (1), 400 or 401 (3), 411 and 412 (6), 417 and 418 (2). Select six credits from THE 217, 227, and 413. Recommended electives include courses in related fields such as anthropology, art, communication studies, history, literature, music, psychology, and sociology.

A total of 120 credits is required for this specialization.

Design and Theatre Technology. Students selecting design and theatre technology must complete an additional 31 credits: THE 300 (3), 301 (3), 351 or 352 (3) to complete the sequence begun in the core curriculum; 350 (1), 355 (3), 365 (3), 371 (3); and 12 credits selected from 362 (3), 400 (3), 401 (3), 415 (12), 451 (3), 455 (3), 463 (3), 465 (3), 475 (3). Recommended electives include ARH 251, 252, ART 207, and courses in related fields.

A total of 120 credits is required for this specialization.

Directing. Students selecting directing must complete an additional 35 credits: THE 300 or 301 or 307 (3), 322 (3), 331 (3), 341 (3), 355 or 365 or 371 (3), 400 or 401 (3), 420 (3), and 484 (3). They must also complete a three-semester sequence in acting: 112 (3), 211 (3), 213 (1), 212 (3), and 214 (1), to total eleven (11).

Recommended electives include courses in anthropology, art history, history, literature, music, psychology, and sociology.

A total of 120 credits is required for this specialization.

Stage Management. Students selecting stage management must complete an additional 30 credits: COM 320 (3); management course (to be approved by chair) (3); THE 300 (3), 301 (3), 341 (3), 355 or 365 (3), 371 (3), 400 (3), 401 (3), 441 (3).

A total of 120 credits is required for this specialization.

Women's Studies

The aim of this interdepartmental program is to provide an option for students who are interested in the interdisciplinary study of the culture and experiences of women and the ways gender affects social, cultural, political, and economic policies and structures locally, nationally, and globally.

Faculty: Assistant Professor Lisberger, *director.* Professors Aronian, Beauvais, Brownell, J. Campbell, Cappello, Danis, Donnelly, Dvorak, Eaton, Grubman-Black, C. Hamilton, Hughes, Ketrow, Livingston, Luebke, Mederer, J. Miller, Quina, Reynolds, Rollo-Koster, Roworth, M. Schwartz, K. Stein, Strom, and Walton; Associate Professors Derbyshire, de los Heros, Karno, Kirchner, Pegueros, Rusnock, Sama, and Torrens; Assistant Professors Lisberger and K. Owens; Adjunct Professors Barker, Brandt, Brennan, Carlson, DeFrancis, Evans, Hagen, Johnson, Jones, Kosmider, Labelle, Moio, Nichols, Petronio, Pisa, Quinlan, Riley, Rutherford, Saunders, Sears, Stepien, and Wild.

The Major. This program leads to a Bachelor of Arts (B.A.) degree in women's studies.

The program requires 30 credits for a major. Five required courses are WMS 150, 300 or 320, 310, 315, and 400. Five courses needed to complete the concentration may be selected from: AAF 290; APG 328; ARH 285; BUS 346; COM 322; ECN 386; ENG 260, 317, 385; HDF 230, 298, 430, 432, 433, 437, 505, 559; HIS 118, 145, 146, 308, 350, 351, 352, 355, 376, 391; KIN 475, 555; NUR 150, 459; PHL 210; PSC 441; PSY 430, 466, 480; SOC 212, 242, 413, 420, 430; TMD 224; WMS 220, 301, 305, 306, 317, 325, 350, 351, 360, 365, 370, 401, 402, 450, 490, 500, 501, 502; and WRT 645. In addition to this list, there are special courses offered by various departments each year that may be selected with prior approval of the Women's Studies Advisory Committee, and some additional preapproved topics courses not offered on a regular basis. Students must file a program of study with the dean's office. The Women's Studies Advisory Committee also strongly recommends that majors take an additional 18 credits in a specialized area as a minor.

A total of 120 credits is required for graduation. At least 42 of these must be in courses numbered 300 or above. A GPA of at least 2.00 in the major and overall is required to graduate.

The Minor. Students who declare a minor in women's studies are required to complete 18 credits including WMS 150 and WMS 315, and three credits from any other WMS course. The remaining nine credits may be selected from any WMS course or from the following: AAF 290, 300C; APG 328; ARH 285; BUS 346; COM 322; ECN 386; ENG 260, 317, 385; HDF 230, 298, 430, 432, 433, 437, 505, 559; HIS 118, 146, 308, 352, 391; KIN 475; NUR 150, 459; PHL 210; PSY 430, 466, 480; SOC 212, 242, 413, 420, 430; TMD 224. There may be additional courses offered by various departments each year that may be selected with prior approval of the Women's Studies Advisory Committee. A GPA of at least 2.00 is required.

Post-Baccalaureate Certificate. Please see page 164.

Writing and Rhetoric

The College Writing Program offers the Bachelor of Arts (B.A.) degree.

Faculty: Associate Professor Miles, *director.* Professors Schwegler and Shamoan; Assistant Professors Dyehouse, Owens, and Pennell; Associate Professor Emerita Vaughn.

The Major. This program is designed for undergraduate students who seek a career in professional writing, teaching, or publishing. Graduates will have a strong foundation in rhetorical theory and composing strategies as well as familiarity with various writing technologies, and they will leave URI with an electronic

portfolio that will demonstrate their ability to design and write a number of different documents, targeted to different audiences and purposes.

Writing and rhetoric majors must complete 30 credits (maximum 51), including WRT 201, 235, 360, 490, and 495. At least 15 credits for the major must be completed from writing courses numbered 300 or above. A maximum of 6 credits for the major may be taken in online courses or through distance learning. Writing and rhetoric majors are strongly encouraged to complete a practicum experience, either the internship or fieldwork course. Undergraduates wishing to take 500-level courses must secure the instructor's permission.

A total of 120 credit hours is required for graduation. At least 42 of these credits must be in courses numbered 300 or above.

The Minor. Students who declare a minor in writing and rhetoric must complete 18 credits from WRT courses at or above the 200-level. Students must take at least one 200-level course. Students can apply toward the minor a maximum of three credits earned through WRT 383 and WRT 484 each. 100-level courses and WRT 391 and 392 will not be counted as part of the minor.

COLLEGE OF BUSINESS ADMINISTRATION

Mark Higgins, Dean
Shaw K. Chen, Associate Dean
Michaela Mooney, Associate Dean for
Development
Deborah Rosen, Associate Dean
Peg Ferguson Boyd, Assistant Dean

Faculty: Professors Beauvais, Beckman, Budnick, S. Chen, Comerford, Cooper, Dash, Della Bitta, N. Dholakia, R. Dholakia, Hazera, Hickox, Higgins, Jarrett, Mangiameli, S. Martin, Matoney, Mazze, D. Rosen, Scholl, Schwarzbach, and Westin; Associate Professors Boyle, Creed, Dugal, Dunn, Graham, Hales, Y. Lee, Lin, Lloyd, Oppenheimer, Sheinin, and Yu; Assistant Professors Blanthorne, Cai, Y. Chen, DaDalt, Dorado, Jelinek, Jervis, Kroes, Leonard, Shin, Wheeler, and Y. Xu.

The seven majors in the College of Business Administration allow students to develop competence in special fields of interest and prepare them to meet the changing complexities of life and leadership in the business community. Majors are offered in accounting, entrepreneurship management, finance, general business administration, global business management, marketing, and supply chain management.

Basic courses required of all undergraduates at the University introduce the student to the humanities, social sciences, physical and biological sciences, letters, foreign language, and the arts. The business curriculums develop the student's professional capabilities through a broad group of business courses with specialization in one area of study. Business programs provide a strong foundation in accounting, finance, marketing, organization and management theory, supply chain management, and statistics. The college emphasizes behavioral studies and computer technology to meet the needs of the business community and society as a whole. Emphasis is placed on the total business environment, as a part of the national and world economic structure.

Theory, analysis, and decision-making are stressed in all areas of learning.

The College of Business Administration is a professional school with courses in lower and upper divisions. The lower-division courses constitute those taught in the freshman and sophomore years; the upper-division courses constitute those taught in the junior and senior years. Courses taken by transfer students at the lower-division level may be applied to satisfying upper-division requirements only after successful completion of a validating examination. All 500- and 600-level courses in the college are open to matriculated graduate students only.

A student enrolled in this college must complete the curriculum in one of the majors and must obtain an overall cumulative grade point average of 2.00 or and a 2.00 or better average for all required courses in the major. Students wishing permission to substitute required courses or waive other requirements may petition the college's Scholastic Standing Committee. Petition forms are available in the Office of the Dean.

Admission Requirements

All students are initially enrolled in University College, where they complete general education and lower-business core courses. Core requirements include accounting, economics, business computing and decision-making, mathematics, and statistics. First-semester sophomores who complete a minimum of 42 credits with an overall grade point average of 2.50 or higher and who have a 3.00 or higher average in BUS 111, 201, 210, and ECN 201 will be admitted. Students not qualifying after the first semester of their sophomore year must still meet the requirements of an overall grade point average of 2.50 and a 2.70 or higher average in BUS 111, 201, 202, 210, and ECN 201 and 202.

Students who have not satisfied entrance requirements may petition the Scholastic Standing Committee of the college for a waiver of those requirements during their

fourth or succeeding semesters. Students in the University College business programs who have not met entrance requirements to the College of Business Administration are permitted to enroll only in 100- and 200-level business courses and in nonbusiness courses.

To ensure that business majors have access to required courses, a strict registration policy will be followed with regard to business courses. Highest priority will be given to business students for whom a course is a program requirement, as stated in this catalog, followed by any other student in the College of Business Administration, and then students outside the College of Business Administration who specifically need the course as a requirement for their degree.

Curriculum Requirements

The first two years are common to all majors in the college.

Freshman Year: 16 credits in the first semester and 15 credits in the second semester. All students must complete a behavioral science course from the following list: APG 203; PSY 103, 113; SOC 100, 204. BUS 110 and 111 are taken in alternate semesters, with the balance of credits in general education. Students majoring in global business management are required to complete PSC 116. Students majoring in accounting are required to complete PHL 212.

Sophomore Year: 15 credits in each semester. The BUS 201, 202, ECN 201, 202, and BUS 210, 211 (finance, marketing, or supply chain management majors only) sequences are begun in the first semester and completed in the second. WRT 227 may be taken in either semester. The balance of credits is made up of general education requirements and liberal electives.

General Education. Students are required to select and pass 39 credits of course work from the general education requirements as listed on pages 33–35. Specific requirements of the College of Business Administration in each group follow:

Group A (6 credits). A minimum of three credits must be in literature: AAF 247 [D], 248 [D]; CLA 391 [D], 395 [D], 396 [D], 397 [D]; CLS 160 [D]; ENG 110 [D], 160 [D], 241 [D], 242 [D], 243 [D], 247 [D], 248 [D], 251 [D], 252 [D], 260 [D], 262, 263 [D], 264, 265, 280 [D], 300 [D], 302 [D], 303 [D], 304 [D], 355 [D], 357 [D], 358 [D]; FRN 309 [D], 310 [D], 320 [D], 391 [D], 392 [D], 393 [D]; HPR 125; RUS 391 [D], 392 [D]; SPA 305 [D], 306 [D], 307 [D], 308 [D], 320 [D].

The remainder may be in Fine Arts: ARH 120 [D], 251 [D], 252 [D]; ART 101, 207; FLM 101 [D], 203 [D], 204 [D], 205 [D]; HPR 105, 124; LAR 201; MUS 101 [D], 106 [D], 111, 292, 293 [D]; PLS 233; THE 100, 181, 351 [D], 352 [D], 381, 382, 383.

Groups L (6 credits) and N (6 credits). Any course for which prerequisites have been met.

Group MQ (3 credits). BUS 111 in the freshman year.

Group S (6 credits). ECN 201, 202 in the sophomore year.

Group EC (6 credits). COM 100; WRT 104, 105, 106, 201, or 333 in the freshman year and WRT 227 in the sophomore year.

Group FC. The language requirement can be met using either of the following options:

Option 1. A two-course sequence in a language previously studied for two or more years in high school through at least the 103 level in a living language or 301 in a classical language appropriate to a student's level of competence (e.g. 102 and 103). Note: Study abroad may be used to complete the second semester requirement of a foreign language only under option 1 (e.g., 102 at URI, study abroad would count as 103).

Option 2. A two-course sequence in a language not previously studied (or studied for less than two years in high school) through the beginning level (e.g., 101 and 102).

Note: Study abroad does not waive the foreign language requirement. As the above indicates, a minimum of 102 in a foreign language must be completed.

Electives. Liberal electives are courses offered by departments outside the College of Business Administration.

Business Track in the Honors Program.

In cooperation with the University Honors Program, academically talented business students are able to enhance their intellectual development and strengthen their preparation by participating in the Business Track in the Honors Program.

Minors. College of Business Administration majors are encouraged to develop a nonbusiness minor. See page 35 for requirements and options relating to minors, along with a list of approved interdepartmental minors. Students in the College of Business Administration choosing the third option described on page 35—"related studies from more than one department under the sponsorship of a qualified faculty member"—need the approval of the Scholastic Standing Committee.

Nonbusiness students wishing to obtain a departmental minor in the College of Business Administration should expect to take the required six courses over a period of two years. Admission is on a space-available basis only, and therefore not guaranteed. Interested students should complete an application form, available from the Office of the Dean of the College of Business Administration.

International Business Program. In cooperation with URI's Department of Modern and Classical Languages and Literatures, the College of Business Administration offers an opportunity for students to complete a double major and receive a B.S. in Business Administration and a B.A. in foreign language. The business requirements include a major in accounting, entrepreneurial management, finance, general business administration, global business management, marketing, or supply chain management. The student also

develops a language component, choosing to major in French, German, Italian, or Spanish, or choosing to minor in Chinese. In addition, studies in international politics, European history, and courses in history and literature of the target country are included. Following the junior or senior year, students must complete a study abroad experience and a professional internship experience.

Accounting

The College of Business Administration offers a curriculum leading to the Bachelor of Science (B.S.) degree with a major in accounting. This curriculum provides the education requirements recommended by the American Institute of Certified Public Accountants for certification as a public accountant (CPA). The college also offers a Master of Science (M.S.) degree in accounting.

The increased scope of governmental and business activities has greatly extended the field of accounting and has created an unprecedented demand for accountants in both government and industry. This curriculum has been designed to meet that demand.

In addition to providing a general liberal arts and business background, the curriculum offers specialized training in the fields of general accounting, cost accounting, and public accounting. It offers specific, basic training to students who wish to become industrial accountants, cost analysts, auditors, credit analysts, controllers, income tax consultants, teachers of specialized business subjects, certified public accountants, government cost inspectors, or government auditors.

The broad scope of the courses offers fundamental training in the accounting field of the student's choice, whether this training is to be used as an aid to living or as a basis for graduate study.

*Junior Year**First semester: 15 credits*

BUS 301 (3), 320 (3), 341 (3), 401 (3), and one liberal elective (3)..

Second semester: 15 credits

BUS 302 (3), 355 (3), 365 (3), 403 (3), and PSC 113, 116 or GEG 104 (3).

*Senior Year**First semester: 15 credits*

BUS 303 (3), 318A (3), 345 (3), and 404 (3), and one liberal elective (3).

Second semester: 15 credits

BUS 402 (3), 428 (3), 445 [capstone] (3), and two liberal electives (6).

Note: All accounting majors are required to complete a minimum of three credit hours in each of the following areas. *Ethical Foundations:* fulfilled by taking PHL 212 as a Letters general education requirement or as a liberal elective. *Political Foundations:* fulfilled by taking PSC 113, 116, or GEG 104 as a liberal elective.

Entrepreneurial Management

The College of Business Administration offers a curriculum leading to the Bachelor of Science (B.S.) degree with a major in entrepreneurial management. The curriculum is intended to provide the student with a background to tackle all aspects of a small business or entrepreneurial endeavor. The entrepreneur faces unique situations and needs a variety of skills to meet the challenges these situations present. Our program builds the skills necessary to the successful development of a business enterprise and includes courses in human resource management, marketing research, customer relationship marketing, leadership, and motivation.

With a degree in entrepreneurial management, students are prepared to start and manage their own business or work for companies in an entrepreneurial role.

*Junior Year**First Semester: 15 credits*

BUS 315 (3), 341 (3), 345 (3), 365 (3), and one liberal elective (3).

Second semester: 15 credits

BUS 320 (3), 342 (3), 355 (3), 367 (3), and one liberal elective (3).

*Senior Year**First semester: 15 credits*

BUS 441 (3), 443 (3), 449 (3), 467 (3), and one liberal elective (3).

Second semester: 15 credits

BUS 445 [capstone] (3), 448 (3), 450 (3), and two liberal electives (6).

Finance

The College of Business Administration offers a curriculum leading to the Bachelor of Science (B.S.) degree with a major in finance. The college also offers the Master of Business Administration (M.B.A.) degree with an opportunity for specialization in finance and the Doctor of Philosophy (Ph.D.) degree.

A finance curriculum is designed to prepare the student to be eligible to pass the Certified Financial Analysts (CFA) Level 1 exam. This background prepares the student for managerial positions in the private, public, and nonprofit sectors. The curriculum emphasizes both financial decision-making and implementation.

Careers in finance are found in financial institutions; security analysis, portfolio, and related investment management; corporate financial management leading to positions as treasurer, controller, and other financial administrative positions; and financial administration tasks in federal and state agencies as well as in the nonprofit sector in hospitals, nursing homes, and educational institutions.

*Junior Year**First semester: 15 credits*

BUS 301 (3), 320 (3), 365 (3), 341 (3), and one liberal elective (3).

Second semester: 15 credits

BUS 302 (3), 318B (3), 321 (3), 322 (3), and one liberal elective (3).

*Senior Year**First semester: 15 credits*

BUS 345 (3), 421 (3), 424 (3), 428 (3), and one liberal elective (3).

Second semester: 15 credits

BUS 355 (3), 420 (3), 445 [capstone] (3), and two liberal electives (6).

General Business Administration

The College of Business Administration offers a curriculum leading to the Bachelor of Science (B.S.) degree with a major in general business administration. This curriculum offers the student an opportunity to study all phases of business operation. It is particularly suitable for: 1) those students who are planning to operate their own businesses and are seeking a broad business background; 2) those who are preparing for positions in large organizations with training programs in which specialization is taught after employment; and 3) those who desire a general business background at the undergraduate level prior to taking more specialized graduate work.

A general business administration student takes a broad spectrum of courses and does not concentrate in one special field of study. The student cannot enroll in more than six (6) credits of professional electives in any area of business. All general business administration majors are strongly encouraged to include in their program of study an internship, or a study abroad experience, or a minor in a field outside of the College of Business Administration.

*Junior Year**First semester: 15 credits*

BUS 320 (3), 341 (3), 335 (3), 365 (3), and one liberal elective (3).

Second semester: 15 credits

BUS 315 (3), BUS 355 (3), 342 (3), 448 (3), and one liberal elective (3).

*Senior Year**First semester: 15 credits*

BUS 345 (3), two professional electives (6), and two liberal electives (6).

Second semester: 15 credits

BUS 445 [capstone] (3), 460 (3), two professional electives (6), and one liberal elective (3).

Global Business Management

The College of Business Administration offers a curriculum leading to the Bachelor of Science (B.S.) degree with a major in global business management. The curriculum is designed to prepare students to meet the challenges of an international career by achieving a high degree of proficiency in the language of another country as well as a background in its history, economy, politics, culture, and arts. In addition to the common body of knowledge required of all business students, global business management majors will study business principles taught from a global perspective. A required internship abroad and/or study abroad experience is an essential part of the program.

*Junior Year**First semester: 15 credits*

BUS 320 (3), 341 (3), 355 (3), 365 (3), and one foreign language (3).

Second semester: 15 credits

BUS 345 (3), 342 (3), 460 (3), one foreign language (3), and one liberal elective (3).

*Senior Year**First semester: 15 credits*

Study Abroad: Business-related courses (12) and one liberal elective (3).

Second semester: 15 credits

BUS 318B (3), 428 (3), 468 (3), 445 [capstone] (3), and one Letters course (3).

Management Information Systems

As of fall 2007, admission to this program has been suspended.

Marketing

The College of Business Administration offers a curriculum leading to the Bachelor of Science (B.S.) degree with a major in marketing. Elective courses in the department expose students to career opportunities in a variety of fields in marketing. The college also offers the Master of Business Administration (M.B.A.) degree with an opportunity for specialization in marketing and the Doctor of Philosophy (Ph.D.) degree.

A major focus of marketing is determining product and service needs of consumers and industries as well as understanding how an organization deals with these marketing issues. The courses required of a marketing major give the student a well-rounded view of consumer and organizational needs.

*Junior Year**First semester: 15 credits*

BUS 315 (3), 355 (3), 365 (3), 366 (3), and one liberal elective (3).

Second semester: 15 credits

BUS 320 (3), 341 (3), 345 (3), 367 (3), and one liberal elective (3).

*Senior Year**First semester: 15 credits*

BUS 441 (3), 460 (3), 468 (3), and two liberal electives (6).

Second semester: 15 credits

BUS 445 [capstone] (3), 465 (3), 467 (3), 470 (3), and one analytical/creative elective (3).

Supply Chain Management

The College of Business Administration offers a curriculum leading to the Bachelor of Science (B.S.) degree with a major in supply chain management. The supply chain management major is a comprehensive program covering the basic and advanced topics necessary for designing, implementing, operating, and improving global supply chains.

Careers in supply chain management span every industry. Career options also include a diverse list of positions including inventory management, customer relationship management, scheduling, purchasing, and facilities management.

*Junior Year**First semester: 15 credits*

BUS 315 (3), 341 (3), 355 (3), 360 (3), and one liberal elective (3).

Second semester: 15 credits

BUS 320 (3), 360 (3), 362 (3), 365 (3), and one liberal elective (3).

*Senior Year**First semester: 15 credits*

BUS 345 (3), 361 (3), 460 (3), 464 (3), and one liberal elective (3).

Second semester: 15 credits

BUS 445 [capstone] (3), 462 (3), 463 (3), 467 (3), and one liberal elective (6).

ALAN SHAWN FEINSTEIN COLLEGE OF CONTINUING EDUCATION

John H. McCray Jr., *Vice Provost for
Urban Programs*
Kathryn Quina, *Associate Dean*

The Alan Shawn Feinstein College of Continuing Education (ASFCCE) confers the University's Bachelor of General Studies degree and sponsors nearly 500 additional courses per semester, allowing students to pursue or complete a number of other University degree programs at the Feinstein Providence Campus. All ASFCCE-sponsored programs and courses are designed to respond to the needs of busy students with jobs, families, and personal responsibilities that may conflict with the more traditional full-time residential college experience. At ASFCCE students will find a dedicated staff, a flexible class schedule, and a supportive community composed of commuter, part-time, adult, financially independent, or otherwise nontraditional students who are assuming multiple roles as they pursue their University studies.

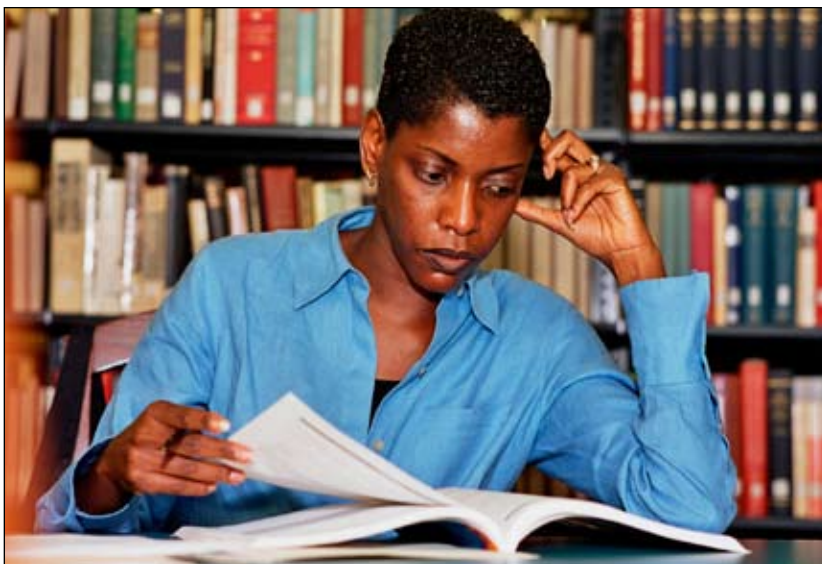
ASFCCE offers the following degree and majors:

Bachelor of General Studies
Applied Communications
Business Institutions
Health Services Administration
Human Studies

In addition, the Feinstein Providence Campus sponsors courses leading to the following degrees in other University colleges:

Bachelor of Arts
Communication Studies
English
History
Psychology

Bachelor of Science
Clinical Laboratory Sciences (specialty in
Biotechnology Manufacturing)
General Business Administration
Human Development and Family Studies



Graduate-Level Programs

Adult Education (M.A.)
Business Administration (M.B.A.)
Clinical Laboratory Science (M.S.)
Communication Studies (M.A.)
Labor Relations and Human Resources
(M.S.)
Library and Information Studies (M.L.I.S.)
Public Administration (M.P.A.)

Information on the college's B.G.S. degree follows. For curriculum requirements on any of the other programs listed above, see the index to find the appropriate section of this catalog.

LEAP (Learning Enhancement for Adults Program), which helps students build confidence and skills in reading, writing, and basic computer applications, is available to interested returning adult students. Also, students may qualify for scholarships offered exclusively to ASFCCE students.

ASFCCE also offers for-credit certificate programs in applied behavioral psychology, psychology, alcohol and drug counseling, and thanatology, as well as non-credit certificate programs. Individual credit and noncredit Continuing Education Unit (CEU) courses are offered in addition to institutes and special courses planned for business, industry, labor, and government agencies.

Courses are offered on weekday mornings, afternoons, evenings, and Saturdays. The college also offers distance learning courses through the Internet. Students enrolling in a degree program may attend at times most convenient for them.

Bachelor of General Studies

The Bachelor of General Studies (B.G.S.) program is designed for adults who have been out of school for five or more years. It is a good choice both for people who have never been to college and for students who attended college in the past but did not complete a degree. For the latter, the B.G.S. program makes it possible to apply their previous educational experience toward a degree program. The admission process should begin with an interview with a B.G.S. advisor in the Providence Campus's Admission and Advising Office.

Qualified applicants interested in other programs at ASFCCE may also be interested in the college's performance-based admission policy; see page 28 for details.

The B.G.S. program consists of the following required sections: 1) Pro-Seminar (BGS 100), 2) Traditions and Transformations (URI 101B), 3) general education, 4) major curriculum, 5) electives, and 6) Senior Project (BGS 399).

A total of 118 credits is required for the Bachelor of General Studies degree.

Pro-Seminar for Returning Students

(3 credits). This is the required entry course that introduces returning students to the college's academic environment. The BGS 100 course helps students identify their scholastic strengths and interests, and assists adults in building the self-confidence to pursue a degree plan. The Pro-Seminar is limited to 16 students and opens the door to the University by helping returning students adjust to academic life. The instructors are carefully chosen and all have prior experience in teaching adults.

While enrolled in the Pro-Seminar, B.G.S. students are encouraged to take one or more College Level Examinations Program (CLEP) tests to measure academic knowledge acquired through prior experience. Credits gained through these tests are applied to the general education requirements. (See page 31 for information on the CLEP tests.)

Traditions and Transformations

(1 credit). URI 101B is a University-wide seminar to introduce new students to the academic culture of higher education and to significant issues that bear on the development of each student's goals for the undergraduate years. Students enroll concurrently in URI 101B and the Pro-Seminar (BGS 100).

General Education Requirements

(39 credits). Students in the B.G.S. program must meet the University's general education requirements as explained on pages 33–35, including the URI 101 requirement. (Note: Health services administration majors must take MTH 107 or STA 220 as the math requirement.) B.G.S. students use Senior Seminars BGS 390, 391, 392 to fulfill general education requirements. Students should consult frequently with their B.G.S. advisor to be sure all general education requirements are met.

Senior Seminars (18 credits). The Senior Seminars are a distinctive feature of the B.G.S. program. These three six-credit

seminars are interdisciplinary in nature and enable students to integrate and synthesize their educational experiences. These seminars are normally begun when students have completed their other general education courses and most of the courses required for their major.

BGS 390 Social Science Seminar
(6 credits)

BGS 391 Natural Science Seminar
(6 credits)

BGS 392 Humanities Seminar
(6 credits)

Major Curriculum (45 credits). B.G.S. students can choose from the following majors: applied communications, business institutions, health services administration, and human studies. These majors allow students to take courses in several disciplines to meet their educational goals in a nontraditional way. A major may be made up of a carefully prescribed set of courses or it may be flexible in its requirements, allowing students to work creatively with an advisor to design an individualized program that meets both the student's needs and the general goals of the B.G.S. program.

Electives (24–27 credits). Electives permit students to complete the B.G.S. degree in a number of creative ways, through course work, carefully designed work experience, internships, or previous but relevant educational experience.

Senior Project (3 credits). All B.G.S. students must complete BGS 399. This **capstone** experience for B.G.S. students provides a structure that enables the student to integrate knowledge and skills from coursework and related experiences with a research project or field experience. The project must be designed so that it allows the student to demonstrate the relationship of subject matter, theory, and practice. Students are required to meet with the B.G.S. coordinator to plan a project proposal. This written proposal must meet with the approval of both the coordinator and an appropriate faculty advisor before the student can register for BGS 399.

APPLIED COMMUNICATIONS MAJOR

Students interested in the broad field of applied communications will be interested in this major. It allows a student, working with an advisor, to design an individual program that must then be approved by the program coordinator.

Communications Core (24 credits). These courses, all at or above the 200 level, must be chosen from communication studies, journalism, and writing (or ENG 205 or 305), with 12 credits from one department and six credits from each of the other two. Prerequisite communications courses are COM 100 and WRT 105.

Methodology Course (3 credits). Students may select COM 206, 381, 382, 383, HDF 202, PSY 300, or STA 308.

Major Seminar (BGS 398 [**capstone**]) (3 credits). Students take this course near the end of their degree program, as it gives them an opportunity to review and evaluate the skills and knowledge they have acquired through their major.

Area of Emphasis (15 credits). With the help of an advisor, students select 15 credits that will comprise an area of emphasis, which may be used either to further develop skills in communications or for study in related areas. This area of emphasis must be approved by an advisor and the program coordinator by the beginning of the student's junior year.

BUSINESS INSTITUTIONS MAJOR

Students interested in the broad field of business will be interested in this major. This is a fully prescribed program with a specific list of required courses (course codes in parentheses refer to the former codes for these courses):

BUS 110 Business Computing Applications (BAC 110) or CSC 101, Computing Concepts
BUS 111 Introduction to Business Analysis and Applications (BAC 120) or MTH 131, Applied Calculus I

| | |
|---------|---|
| BUS 201 | Financial Accounting (ACC 201) |
| BUS 202 | Managerial Accounting (ACC 202) |
| BUS 210 | Managerial Statistics I (BAC 201) or STA 308, Introductory Statistics |
| BUS 315 | Legal and Ethical Environment of Business I (BSL 333) |
| BUS 320 | Financial Management (FIN 301) |
| BUS 340 | Organization and Management Theory I (MGT 301) |
| BUS 355 | Operations and Supply Chain Management (MSI 309) |
| BUS 365 | Marketing Principles (MKT 301) |
| ECN 201 | Principles of Economics: Microeconomics |
| ECN 202 | Principles of Economics: Macroeconomics |
| WRT 227 | Business Communications Business Elective (3 credits) |

In addition to the courses above, students must elect one liberal elective course offered by a department outside their major. Most courses that fulfill these major requirements are available in Providence in the evening.

HEALTH SERVICES ADMINISTRATION MAJOR

This interdisciplinary major offers students a broad overview of the health care system, while allowing them to focus on a specific area of interest. The program provides strong preparation for entry or midlevel managerial and supervisory positions in organizations such as skilled nursing facilities, adult day care centers, home health care agencies, hospitals, clinics, laboratories, physicians' offices, governmental and regulatory agencies, and health plans. This course of study may also be applied in industries related to the health field, such as research and development, pharmaceuticals, and the insurance or computer industry. Graduates are eligible to sit for the Rhode Island exam for nursing home licensure, through courses taken in the area of emphasis.

This major is appropriate for students who have no previous exposure to this field, and for those who may already be employed in the field and are looking for a degree to give them the skills and knowledge to assume more significant responsibilities.

This major is also appropriate for students with 2-year allied health degrees who wish to continue their undergraduate studies. In most cases, a substantial portion of credits earned in the 2-year program will transfer toward the bachelor's degree.

Major Courses (30 credits)

| | |
|---------|---|
| BUS 201 | Financial Accounting (formerly ACC 201) |
| ECN 201 | Principles of Economics: Microeconomics |
| ECN 360 | Health Economics |
| HDF 202 | Research Perspectives in Human Development & Family Studies |
| HDF 357 | Family and Community Health |
| HSA 360 | Health Services Administration |
| HSA 380 | Introductory Health Services Practicum |
| PHL 314 | Ethical Problems in Society and Medicine |
| PSC 481 | Political Science Seminar: Health Care Policy and Politics |
| SOC 224 | Health, Illness, and Medical Care |

Areas of Emphasis within the Health Services Administration Major (18 credits): Students fulfill the area of emphasis requirement by choosing from existing minors (see page 35), or by designing an area of emphasis to fit the student's experience and career interests.

HUMAN STUDIES MAJOR

Students interested in the wide range of human studies or human services will be attracted to this major. It permits the student, working with an advisor, to design a major that will meet both personal and career goals. All human studies majors must have their program design approved in advance by an academic advisor and the program

coordinator. It must include the following four parts:

Social Science Core (24 credits). Students are required to select 24 credits from three of the following departments in the College of Arts and Sciences: economics, history, political science, psychology, and sociology and anthropology. These departments determine which of their courses are suitable for the B.G.S. major.

The 24 credits must be distributed as follows: four courses from one department, two courses from a second department, and two courses from a third. Only two prerequisite or introductory-level courses are allowed in the major. Students should meet with an advisor for more information regarding these courses.

Methodology Course (3 credits). Students are strongly advised to fulfill this requirement by taking HDF 202. In exceptional cases, students may be allowed to meet the methods requirement by taking PSY 300, SOC 301, or STA 220.

Major Seminar (BGS 397 [capstone], 3 credits). Students take this course near the end of their degree program. It will give them an opportunity to review and evaluate the skills and knowledge they have acquired through their major.

Area of Emphasis (15 credits). The area of emphasis provides the student with an opportunity to select a group of courses that focus on a particular problem or population of interest. Once a particular focus is identified, students select 15 credits at or above the 300 level from a wide variety of departments. The advisor and the B.G.S. coordinator must approve the Area of Emphasis.

Registration and Admission

Students must enroll in courses prior to the beginning of each semester. Being enrolled in a course is not the same as being admitted to the University. To apply for admission to an undergraduate degree program, a student must follow the application procedure (description follows). However,

credits earned through successful completion of courses may eventually be applied toward a degree program after a student is accepted as a degree candidate.

Beginning students who have been away from school for some time with little or no course work beyond high school are encouraged to register in the Pro-Seminar (BGS 100), and Traditions and Transformations (URI 101B) (see page 77).

Any adult may enroll as a nonmatriculated student in ASFCCE. Most courses at the University are open to nonmatriculated students; however, day courses at the Kingston campus are open only on a space-available basis.

All information and forms necessary for registration are available on the Providence campus Web site at uri.edu/prov. Our online schedule contains up-to-date course offerings and fees, and is available during the registration periods. You may also contact ASFCCE for a printed course schedule at 80 Washington Street, Providence, RI 02903; 401.277.5160.

Application Procedure. A student who wishes to enroll in an undergraduate degree program at ASFCCE should begin by scheduling an interview with an academic advisor to explore the options available and to discuss the student's previous educational experiences. The student then fills out an admission application and provides the necessary transcripts and other paperwork.

Once a student is admitted to an undergraduate degree program, he or she should consult frequently with the advisor. The student and advisor will fill out a program worksheet that lists the courses necessary to complete the degree.

Alternate Ways to Earn Credit. ASFCCE recognizes a number of ways to earn college credits. Students may take CLEP (College Level Examination Program) exams in a wide variety of areas to earn credit. Students may also participate in the Prior Learning Assessment (PLA) program to document college-level learning acquired outside the college classroom. Credit is also available for some military training and employer-sponsored training. Contact an academic advisor for more information.

Services for Students

The ASFCCE provides a number of services for students, including free academic advising, peer counseling, career counseling, tutoring, writing assistance, services for students with disabilities, and counseling and testing services. The Providence campus also has a bookstore, a library, and a snack bar, plus a comfortable student lounge area where students and faculty can meet, talk, and relax.

Fees and Finances

Tuition and fees for ASFCCE students are given on page 20 of this catalog. They may also be found in the course schedules for the current term. The registration fee is not refundable except when URI cancels or closes a course. The Student Services Fee supports a student government, and various lectures and cultural events determined by an activities board of elected ASFCCE students. Fees for Special Programs courses vary (consult the course schedule or contact the Special Programs Office). For information on refunds, refer to page 22 of this catalog.

Financial Aid. Financial Aid advising is available to all ASFCCE students through our Admission and Advising Office. Only matriculated students enrolled on at least a half-time basis (six credits) may be considered for an award. Student Financial Assistance determines eligibility for all grants, loans, and employment, which are awarded on an academic-year basis. Financial aid will be awarded only after a student has applied for a Pell Grant and has submitted a Pell Student Eligibility Report to this office.

A limited number of scholarships are available to students matriculating at ASFCCE. Students are required to complete a FAFSA application to be considered. For a brochure, call 401.277.5160.

COLLEGE OF ENGINEERING

Raymond M. Wright, *Dean*
George E. Veyera, *Interim Associate Dean*

URI Engineering's Mission. The College of Engineering (COE) is a diverse community of scholars, learners, and professional staff dedicated to the development and application of advanced technologies, and working together to enhance the quality of life for all. We are creative problem solvers, innovators, inventors, and entrepreneurs, applying our skills for the advancement of knowledge, service to our community, and the economic development of the state of Rhode Island and beyond. We prepare our graduates to be global leaders in a wide range of engineering disciplines and to create new knowledge, products, and services.

Expected Learning Outcomes. As required by the criteria of ABET, Inc., the national Accreditation Board of Engineering and Technology, graduates receiving baccalaureate degrees in all engineering disciplines will demonstrate:

- (a) an ability to apply knowledge of mathematics, science, and engineering
- (b) an ability to design and conduct experiments, as well as to analyze and interpret data
- (c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
- (d) an ability to function on multi-disciplinary teams
- (e) an ability to identify, formulate, and solve engineering problems
- (f) an understanding of professional and ethical responsibility
- (g) an ability to communicate effectively
- (h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context

- (i) a recognition of the need for, and an ability to engage in, life-long learning
- (j) a knowledge of contemporary issues
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Engineers from all fields are heavily involved in the solution of technological and socio-technological problems; industry's needs are for balanced teams of both men and women from different engineering areas. Therefore, the college's goal is to stimulate our students to become creative, responsible engineers, aware of the social implications of their work, and flexible enough to adjust to the rapid changes taking place in the world and, consequently, in all branches of engineering.

The College of Engineering (COE) offers undergraduate majors in biomedical, chemical, chemical and ocean, civil, computer, electrical, industrial, mechanical, and ocean engineering. In addition, an ocean option is available in mechanical engineering. Because the same fundamental concepts underlie all branches of engineering, the freshman-year courses are quite similar for all curricula, and the choice of a specific branch of engineering may be delayed until the beginning of either the second term or the second year of study. Students electing one of the programs that include ocean options follow the curriculum for chemical or mechanical engineering for two or three years and enroll in several ocean engineering courses in the junior and senior years. All of the engineering curricula are based on an intense study of mathematics and the basic sciences supporting the fundamentals of each engineering discipline. These principles are applied to the understanding and solution of problems of current interest and importance in the field. Each curriculum is designed to provide the knowledge and ability necessary for practice as a professional engineer, or for successful graduate study, which may include law, business administration, or medicine, as well as engineering and science disciplines.

Curriculum Requirements

Entering engineering students who have chosen a specific major should follow the particular program listed in this section. It is recommended that those students who have decided to major in engineering but have not selected a specific program take the following courses: CHM 101 and 102, EGR 105, MTH 141, PHY 203 and 273, and a general education requirement during their first semester. Students who are still undecided about their choice of major after completing the first semester should review their choice of courses for the second semester with their advisor to be certain that they meet the prerequisites for the sophomore year.

Students who are undecided about engineering but wish to keep it open as an option should note that MTH 141, 142; PHY 203, 204 and 273, 274; and a course in chemistry are required for graduation from the College of Engineering, and are prerequisites for many engineering courses. They must be taken before transferring from University College (UC) to the COE.

To transfer from UC to the COE, students must not only complete at least 24 credits (including transfer credits) with a grade point average of 2.00 or better, they must also have completed 20 credits from the following list of required courses with a grade point average of 2.00 or better: MTH 141, 142; CHM 101/102; PHY 203/273; EGR 105, 106; and either PHY 204/274 or CHM 112/114.

To meet graduation requirements, students enrolled in the COE must satisfactorily complete all courses of the curriculum in which they are registered and obtain a grade point average of 2.00 or better in all required science, mathematics, and engineering courses (including professional electives). Students are also required to complete an exit survey at least one semester prior to their anticipated graduation date. At the discretion of the dean, students who do not demonstrate satisfactory progress may be required to leave the COE.

Student Advisement. Engineering students are advised by engineering faculty members. While the student is in University College (UC), the advising takes place at UC; once the student transfers to the COE, advising takes place at the departmental level. The office of the Associate Dean of Engineering provides non-routine advising.

General Education Requirements. Engineering students must meet URI's general education requirements listed on pages 33–35, except that only three credits are required in the foreign language or culture component. In these courses, students are exposed to and challenged by concepts from the humanities and social sciences to ensure that the social relevance of their engineering activities will never be forgotten. In selecting courses to satisfy these requirements, students should consult with their advisors to be certain that they have met department-specific course requirements. The requirements in mathematics and natural sciences are satisfied by required courses in the engineering curricula.

Computers. The Engineering Computer Center (ECC), located in the Chester H. Kirk Center for Advanced Technology, supports the teaching and research activities of the College of Engineering. The ECC has a quad processor Dell PowerEdge server providing centralized services for PC file and print sharing, license serving, email, and Web applications. Both wireless and cabled network access are available. Students are assigned computer accounts upon entering the COE and use these accounts until they graduate. Email accounts are also provided. These are maintained separately and do not expire.

There are 85 networked PCs available at the ECC for student use. These are incorporated into two classrooms with projection systems, a main student work area, and two side project/study rooms. Also provided are two scanners, four laser printers, a color laser printer, and a large-scale pen plotter. Areas are available for students to set up their own laptops for access to software, printers, and the network. Available installed software includes Abaqus, Adobe Acrobat,

Adobe PhotoShop, Aspen, AutoCAD, EES, LabView, Maple, MatLab, Microsoft Office, Microsoft Visual Studio, Minitab, Multisim, SolidWorks, and Working Model.

In addition to providing the computer technologies that engineering students rely on for their course work, the ECC provides faculty members with the resources necessary for their teaching and research commitments, through the use of network services, interactive multimedia classrooms, and the expertise of the ECC staff in identifying and procuring hardware and software.

A new 30-seat classroom, called the *Discovery Center*, was added to the ECC in 2008. This state-of-the-art multimedia computer classroom has dual-monitor PCs for the students; an instructor podium with tablet monitors and the ability to interact with any of the student PCs; eight wide-screen, flat-panel TV monitors; and two large screen projectors. This room is heavily used for our introductory freshman engineering classes, where students are introduced to the College of Engineering, engineering career paths, engineering problem solving, teamwork, hands-on projects, and software with applications that they will use in other engineering classes during their time at URI. *The Discovery Center* is also used by other engineering classes and is available to all engineering students for general use during the evenings and in between classes.

The Department of Chemical Engineering has a senior computing room with PCs and a junior computing room, also with PCs. Several specialized software packages such as Aspen and FEMLAB are available on these computers for undergraduate teaching and research. Printers are located in all the computer rooms, and a dedicated large-scale plotter is available in the department.

The Department of Civil and Environmental Engineering has two computational facilities. The CADD Laboratory contains 22 state-of-the-art computers, two large-format plotters, and several printers; it is also equipped with a direct projection multimedia system. In addition to AutoCAD, other software packages are available in this laboratory including AutoCOGO, CIVIL,

CONSOL, Darwin, Eaglepoint, HCS, Land Development Desktop, MicroPaver, RSS, PCSTABL, RamSteel, Seep/W, Sewer-CAD, Slope/W, SRWALL, STAADPro, SURVEY, Synchro, TransCAD, TSIS, WaterCAD, ZStress, and others. Modern geomatics and surveying equipment (funded by the Champlin Foundations) including electronic Total Station and GPS for field data acquisition are linked to the CADD lab computers, printers, and plotters for graphic GIS representation and analysis. The senior Capstone Design Project Studio has six computers used by the design teams during the integrated **capstone** design project.

The Department of Electrical and Computer Engineering has numerous multiprocessor Linux and UNIX servers. The primary servers feature hardware raid and fiber-optic gigabit network connections. The main computing lab hosts 14 general use, dual-monitor Linux work stations, many of which have dual-core processors. These machines are available 24 hours a day to all students in the department. In addition, there are approximately 50 Linux workstations and 40 Windows systems dispersed throughout laboratories and offices. Available software includes Matlab for signal processing, HSPICE for analog circuit simulation, Quartus for FPGA simulation and design, as well as thousands of open-source applications. Numerous laser printers are available, including duplex (two-sided) and color variants. Wireless network access is available throughout the department.

The Department of Mechanical Engineering has a computer classroom that includes 25 networked PC workstations, two high-speed laser printers, and a direct projection system for classroom and seminar presentations. Application software includes SolidWorks, Working Model, Matlab, Abaqus, Algor, Excel, FEMLAB, Maple, Engineering Equation Solver, Compact 2-D (CFD) and others. In addition, laboratories in the Mechanical Engineering Department are equipped with a variety of computers for computational modeling studies, high-speed data acquisition, and control of mechanical devices.

The Department of Ocean Engineering has a computer laboratory at the Narragansett Bay Campus to support both their education and research programs. The laboratory is permanently accessible to students, both physically (in two computer rooms located in the Middleton Building, with electronic code access) and remotely through the Internet. The laboratory is equipped with nine Pentium IV and five dual-core PC workstations, two laser printers, and an 8-processor Microways Opteron computer cluster running UNIX. Each PC features, as a minimum, MatLab, Word, Excel, PowerPoint, LaTeX, Scientific Word, Netscape/Explorer, AUTOCAD, LabView, SolidWorks, and email software. The cluster has an MPI parallel FORTRAN compiler.

Minors and Double Majors. Students wanting to obtain strengths in other areas of academic specialization and yet remain in engineering are encouraged to do so by completing either a minor (please refer to page 35) or double major.

International Engineering Program (IEP). In conjunction with the College of Arts and Sciences, COE offers a five-year program in which students earn two degrees: a Bachelor of Science in engineering and a Bachelor of Arts in a foreign language. The foreign languages currently offered by the IEP are Chinese, German, French, and Spanish. In addition to their engineering and language-related courses, students spend six months abroad in a professional internship in Europe, Latin America, the Caribbean, or Asia. Upon graduation, students are well prepared to compete in the global marketplace. To enroll, an engineering student simply registers and follows the recommended outline of courses for the specific language. In 1992, the IEP was selected as the recipient of the Award for Educational Innovation by ABET, the national Accreditation Board for Engineering and Technology (currently known as ABET, Inc.).

Engineering and M.B.A. Program. This five-year program offers students the opportunity to earn a Bachelor of Science in engineering and a Master of Business Administration (M.B.A.). Students with a GPA of 3.00 or better may enroll during their senior year with successful completion of the Graduate Management Admissions Test (GMAT).

Cooperative Education Program. Optional for juniors and seniors (with a GPA of at least 2.50) in all engineering departments, the Cooperative Education Program assists students with placements for part-time or full-time work directly related to a student's field of study. Enrollment information may be obtained from the Dean's Office, 102 Bliss Hall.

Accreditation. A national accrediting organization, ABET, Inc. (formerly known as Accreditation Board for Engineering and Technology, or ABET) established in 1933 and composed of representatives from technical societies, assures professional standards through periodic evaluations of the programs of the college. ABET, Inc. may be contacted at 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 or by phone at 410.347.7700.

Continuous accreditation of URI's engineering programs by ABET, Inc. has been in place since 1936 for the curricula of civil, electrical, and mechanical engineering, 1954 for chemical engineering, 1957 for industrial engineering, 1992 for computer engineering, 1995 for ocean engineering, and 1989 for the M.S. in manufacturing engineering.

URI's College of Engineering is a member of the American Society for Engineering Education (ASEE).

Graduate Degrees. Graduate study is available in the College of Engineering at the Master of Science and Doctorate (Ph.D.) level. For a listing of advanced degrees, see the "Graduate Programs" section of this catalog.

Biomedical Engineering

The Bachelor of Science (B.S.) degree in biomedical engineering is offered by the Department of Electrical, Computer, and Biomedical Engineering. Specialization in biomedical engineering is also available within the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) programs in electrical engineering.

Coordinator: Professor Ying Sun (Electrical, Computer, and Biomedical Engineering). Professors Boudreaux-Bartels, Jackson, Kumaresan, and Ohley; Associate Professor Vetter; Assistant Professors Besio and Huang; Adjunct Professor Chiramida.

Program Educational Objectives. The biomedical engineering program at URI has four primary objectives:

- 1) Produce graduates who are able to practice biomedical engineering to serve hospitals, government agencies, national, state, regional, and international industries.
- 2) Produce graduates with the necessary background and technical skills to work professionally in one or more of the following areas: biomedical electronics, medical instrumentation, medical imaging, biomedical signal processing, rehabilitation engineering, and medical informatics.
- 3) Prepare graduates for personal and professional success with awareness and commitment to their ethical and social responsibilities, both as individuals and in team environments.
- 4) Prepare graduates who are capable of entering and succeeding in an advanced degree program in a field such as engineering, science, business, or medicine.

Program Description. Biomedical engineering is an interdisciplinary area in which engineering techniques are applied to problem solving in the life sciences and medicine. Biomedical engineers design medical instruments for diagnosis and the treatment of various diseases as well as for research in biology. Examples of instruments for diagnosis include electrocardiographs, electroencephalographs, automatic blood

analyzers, and medical imaging systems such as X-ray imaging, radio-nuclide imaging, ultrasound imaging, computer-assisted tomography, and magnetic resonance imaging. Examples of instruments for treatment include radiotherapy machines, pacemakers, cardiac-assist devices, intelligent drug delivery systems, and lasers for surgery. Biomedical engineers develop artificial organs for prosthesis and various computer software and hardware systems to help provide high-quality, cost-effective health care.

Biomedical engineers are employed in the medical instrument industry, where they invent, design, manufacture, sell, and service medical equipment; hospitals, where they evaluate, select, maintain, and provide training for the use of complex medical equipment; and medical and biological research institutes, where they use unique analytical ability and instrumentation skills to conduct advanced research.

URI's biomedical engineering program combines study in the biological sciences with the areas of engineering that are particularly important for the application of modern technology to medicine. This curriculum is designed to provide students with not only a general background in biomedical engineering but also a special focus on the skills in electrical engineering necessary for developing medical devices. With a few minor elective changes, the program also satisfies the entrance requirements of most medical schools, but students who plan to go on to medical school should consult the premedical advisor and the coordinator of the biomedical engineering program.

For transfer from University College to the College of Engineering in the biomedical engineering program, students must have completed *all science, mathematics, and engineering courses required during the first two semesters* with a grade point average of 2.00 or better.

Minimum Requirements

The major requires 128–129 credits.

Humanities and Social Sciences (27 credits): see the general education requirements for the College of Engineering. Students should consult with their advisors regarding distribution of credits and approved courses (ECN 201 is included in 27-credit total).

Mathematics (at least 14 credits): MTH 141, 142, 243, 362, and technical elective.

Basic Sciences (26 credits): CHM 101, 102, 124; PHY 203, 273, 204, 274; BIO 121, 242, 244, 341.

Statistics (3 credits): STA 409.

Engineering Sciences and Design (55–56 credits): BME 181, 207, 281, 307, 360/361, 461, 462, 464/465, 468, 484, 485; EGR 105, 106; ELE 201/202, 212, 215, 313, 314, 338/339, 400; one technical elective (chosen from CHE 333, 347, 574; CSC 522; ELE 322, 343/344, 423, 435/436, 437, 438, 444/445, 447/448, 458/459, 501, 506; ISE 404, 412; MCE 341, 354, 372; MTH 363, 442, 444, 451, 461, 462, 464, 471, 472).

Free Elective: 3 credits.

Freshman Year

First semester: 16 credits

CHM 101 (3), 102 (1); EGR 105 (1); MTH 141 (4); PHY 203 (3), 273 (1), and ECN 201 (3).

Second semester: 17 credits

BME 181 (1); CHM 124 (3); EGR 106 (2); MTH 142 (4); PHY 204 (3), 274 (1); and general education requirement (3).

Sophomore Year

First semester: 18 credits

BIO 121 (4); BME 281 (1); ELE 201 (3), 202 (1); MTH 362 (3), and general education requirements (6).

Second semester: 15 credits

BIO 242 (3), 244 (1); BME 207 (3); ELE 212 (3), 215 (2); MTH 243 (3).

Junior Year

First semester: 16 credits

BIO 341 (3); BME 307 (3); ELE 313 (3), 338 (3), 339 (1); and general education requirement (3).

Second semester: 16 credits

BME 360 (1), 361 (1); ELE 314 (3); STA 409 (3); general education requirement (3); and free elective (3).

Senior Year

First semester: 15–16 credits

BME 461 (3), 462 (3), 484 (2); ELE 400 (1); technical elective (3–4; see above); and general education requirement (3).

Second semester: 15 credits

BME 464 (3), 465 (1), 468 (3), 485 (2), and general education requirement (6).

Chemical Engineering

The Department of Chemical Engineering offers a curriculum leading to the Bachelor of Science (B.S.) degree in chemical engineering that is accredited by ABET, Inc. In cooperation with the Department of Ocean Engineering, the department offers a curriculum leading to the Bachelor of Science degree in chemical and ocean engineering (not accredited). The department also offers the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees.

Faculty: Professor Bose, *chair*. Professors S. Barnett, R. Brown, Gregory, Knickle, and Lucia; Associate Professors Gray, Greenfield, and Rivero-Hudec; Assistant Professor Bothun; Associate Research Professors Crisman and Park; Adjunct Assistant Professor Trotter; Professors Emeriti Rockett and Rose.

The chemical engineer is concerned with the application and control of processes leading to changes in chemical composition. These processes are most frequently associated with the production of useful products (chemicals, fuels, metals, foods, pharmaceuticals, paper, plastics, and

the like), but also include processes such as removal of toxic components from the blood by an artificial kidney, environmental cleanup, and semiconductor processing. The chemical engineer's domain includes more efficient production and use of energy, processing of wastes, and protection of the environment.

Chemical engineers have a strong foundation in chemistry, physics, mathematics, and basic engineering. Chemical engineering courses include thermodynamics, transport phenomena, mass transfer operations, materials engineering, process dynamics and control, kinetics, and plant design. The student has the opportunity to operate small-scale equipment and to visit local industry. Intensive work is undertaken in the solution of complex problems in which economics and optimization of engineering design are emphasized.

The Department of Chemical Engineering has introduced a new biology track into its curriculum. The primary motivation is to respond to advances in our understanding of biological processes at the molecular and macroscopic levels, and the unique opportunity for chemical engineers to translate that understanding to useful processes. The application of the chemical engineering paradigm to biology will enable graduates to develop new molecular biology tools; drug delivery systems; artificial skin, organs and tissues; sensors and alternative fuels; and to integrate new bio-products into existing materials. The new curriculum is founded on the core principles of transport phenomena, unit operations, thermodynamics, and reaction kinetics. Students opting for this track will take a series of five courses in the Biochemistry and Cell and Molecular Biology departments. Besides preparing students for the biotechnology industry, this combination of biology, chemical engineering, and chemistry courses is relevant to those considering medical school.

Department Mission Statement and

Program Objectives. Consistent with missions of the University and the College of Engineering, URI's Department of Chemical

Engineering seeks to prepare students to practice professionally in the fields of chemical engineering through the provision of high quality undergraduate and graduate educational programs, to provide an environment for satisfying faculty career development, and to maintain a world-renowned scholarly research program.

Program Educational Objectives. The chemical engineering program at URI has four primary objectives:

1) Produce graduates who are able to successfully practice chemical engineering to serve state, local, national, and international industries, and government agencies.

2) Produce graduates with the necessary background and technical skills to work professionally as individuals or in teams in chemical engineering practice or in graduate schools.

3) Prepare graduates for personal and professional success with an understanding and appreciation of ethical behavior, social responsibility, and diversity, both as individuals and in team environments.

4) Prepare graduates to be interested, motivated, and capable of pursuing continued lifelong learning through further graduate education, short courses, or other training programs in engineering or related fields.

URI's chemical engineering program is more than just a collection of courses and credit hours whose content reflects the required criteria. The program has also been carefully designed to prepare students for the profession of chemical engineering through study, experience, and practice. Through eight specific program goals, the Department of Chemical Engineering at URI seeks to:

1) provide the necessary background in science, particularly chemistry, physics, and advanced mathematics through the study of differential equations, so that students will be able to continue their education in the engineering sciences, with depth of understanding, and learn to apply these subjects to the formulation and solution of engineering problems;

2) provide a broad cross section of fundamental engineering science courses, including some from other engineering disciplines so that our students will acquire an understanding of the way in which chemistry, physics, and mathematics have been and continue to be used to solve important engineering problems relevant to the general chemical engineering and engineering design;

3) provide students with experience in conducting and planning experiments in the modern engineering laboratory, including interfacing experiments with computers as well as interpreting the significance of resulting data and properly reporting results in well-written technical reports;

4) provide experience in the process of original chemical engineering design in the areas of equipment design, process design, and plant design through the process of formulating a design solution to a perceived need and then executing the design and evaluating its performance, including economic considerations and societal impacts if any, along with other related constraints, culminating in both written and oral presentations of results;

5) provide experience with the multifaceted aspects of using computers to solve problems and present results with word processing, spreadsheet, presentation, and professional-level applications software used for design and analysis; and provide for obtaining and using information on the World Wide Web;

6) provide a familiarity with professional issues in chemical engineering, including ethics, issues related to the global economy and to emerging technologies, and fostering of important job-related skills such as improved oral and written communications and experience in working in teams at a number of levels;

7) encourage students to become actively engaged in the student chapter of the American Institute of Chemical Engineers and other student organizations, and to continue these associations after graduation with an emphasis on the importance of lifelong professional development including the desirability of attending graduate

school or otherwise obtaining continuing or advanced education; and

8) make available continuous individual advising throughout the entire undergraduate educational experience to insure that each student makes the most of the educational opportunities provided by URI, particularly those related to general education electives that might enhance an engineering education, and special programs such as internships, cooperative experience and especially the International Engineering Programs in Chinese, German, French, and Spanish which are a unique opportunity available to globally motivated URI engineering students.

The major requires 129–130 credits.

Freshman Year

First semester: 16 credits

CHM 101 (3), 102 (1), EGR 105 (1), MTH 141 (4), PHY 203 (3), PHY 273 (1), and general education requirement (3).

Second semester: 17 credits

CHM 112 (3), 114 (1), EGR 106 (2), MTH 142 (4), PHY 204 (3), 274 (1), and ECN 201 (3).

Sophomore Year

First semester: 15–16 credits

CHE 212 (3), CHM 291 (4) or CHM 227 (3), MTH 243 (3), and general education requirements (6).

Second semester: 15–16 credits

CHE 272 (3), 313 (3), 332 (3); CHM 228 or BCH 311, or an approved advanced chemistry course (3), and MTH 244 or 362 (3).

Junior Year

First semester: 17 credits

CHE 314 (3), 347 (3), CHM 431 (3), 335 (2), approved mathematics elective (3), and general education requirement (3).

Second semester: 15 credits

CHE 348 (3), 464 (3), CHM 432 or approved department elective that meets accreditation requirements (3), and general education requirements (6).

Senior Year

First semester: 17 credits

CHE 328 (1), 345 [capstone] (2), 349 (2), 351 [capstone] (3), 425 (3), and approved professional elective (3), and general education requirement (3).

Second semester: 17 credits

CHE 346 [capstone] (2), 352 [capstone] (3), approved professional electives (9), and general education requirement (3).

Chemical and Ocean Engineering. As of June 2009, new admissions to this program have been suspended. Students enrolled in this curriculum follow the program of study for chemical engineering during their freshman, sophomore, and junior years, with OCG 451 as the junior year department elective. The senior year curriculum follows.

The major requires 134–136 credits.

Senior Year

First semester: 18 credits

CHE 328 (1), 349 (2), 351 [capstone] (3), 403 [capstone] (3), 425 (3), and approved professional elective (6).

Second semester: 19 credits

CHE 352 [capstone] (3), 404 [capstone] (3), 534 (3), OCE 311 (4), and general education requirements (6).

Biology Track in Chemical Engineering.

Students enrolled in this curriculum will follow a program similar to the traditional chemical engineering curriculum, but with biology and biochemistry courses replacing some of the other technical and science courses. Total credits: 133.

Freshman Year

First semester: 16 credits

CHM 101 (3), 102 (1); EGR 105 (1); MTH 141 (4); PHY 203 (3), 273 (1), and general education requirement (3).

Second semester: 17 credits

BIO 101 (4); CHM 112 (3), 114 (1); EGR 106 (2); MTH 142 (4); and ECN 201 (3) or general education requirement.

Sophomore Year

First semester: 18 credits

CHE 212 (3), 227 (3); MTH 243 (3), and general education requirements (9).

Second semester: 15 credits

BCH 311 (3); CHE 272 (3), 313 (3), 332 (3); and MTH 244 (3) or 362 (3).

Junior Year

First semester: 16 credits

BIO 341 (3); CHE 314 (3), 347 (3); PHY 204 (3), 274 (1), and general education requirement (3).

Second semester: 17 credits

CHE 348 (3), 464 (3); MIC 211 (4), BIO 352 (4), and general education requirements (3).

Senior Year

First semester: 17 credits

CHE 328 (1), 345 [capstone] (2), 349 (2), 351 [capstone] (3), 425 (3), approved professional elective (3), and general education requirement (3).

Second semester: 17 credits

CHE 346 [capstone] (2), 352 [capstone] (3); BIO 437 (3), an approved professional elective (3), approved math elective (3), and general education requirements (3).

Pharmaceutical Track in Chemical Engineering.

Biopharmaceuticals is one of the fastest growing industrial sectors both in the United States and worldwide, with a projected growth rate of ten percent per year for the foreseeable future. Driving this rapid growth are the worldwide increase in average life span, major developments in our understanding of key factors behind the development of disease, and important innovations in drug formulations and delivery. This growth has created a need for graduates who are well-versed in the basic sciences as well as all technological aspects related to the development process for therapeutic agents—production, scale-up and processing, formulation and delivery, and regulatory constraints. The pharmaceutical engineering B.S. degree program within

chemical engineering serves to meet this need. It combines the well-known strengths of the College of Pharmacy with those of the Department of Chemical Engineering, for a curriculum that will produce leaders in the pharmaceutical industry.

Students follow a curriculum similar to that for traditional chemical engineering, but with biology, biochemistry, and biomedical-and-pharmaceutical-science courses replacing some of the other technical and science courses. The major requires 135 credits.

Freshman Year

First Semester: 16 credits

CHM 101 (3) and 102 (1); EGR 105 (1); MTH 141 (4); PHY 203 (3) and 273 (1), and general education requirements (3).

Second Semester: 17 credits

BIO 101 (4); CHM 112 (3) and 114 (1); EGR 106 (2); MTH 142 (4), and ECN 201 (3) or general education requirements (3).

Sophomore Year

First Semester: 18 credits

CHE 212 (3); CHM 227 (3); MTH 243 (3), and general education requirements (9).

Second Semester: 15 credits

BCH 311 (3); CHE 272 (3), 313 (3), and 332 (3); MTH 244 (3) or 362 (3).

Junior Year

First Semester: 18 credits

BIO 341 (3); BPS 301 (2), 303 (2), and 305 (2); CHE 314 (3) and 347 (3); and general education requirements (3).

Junior Year

Second Semester: 17 credits

CHE 348 (3) and 464 (3); MIC 211 (4); PHY 204 (3) and 274 (1); and general education requirements (3).

Senior Year

First Semester: 17 credits

BPS 425 (3); CHE 328 (1), 345 (2), 349 (2), 351 (3), 425 (3), and 574 (3).

Senior Year

Second Semester: 17 credits

CHE 346 (2), 352 (3), and 548 (3) or approved professional elective (3); approved professional elective (3); and general education requirements (6).

Civil Engineering

The Department of Civil and Environmental Engineering offers a curriculum leading to the Bachelor of Science (B.S.) degree in civil engineering. The department also offers the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in civil and environmental engineering. The Bachelor of Science program in civil engineering is accredited by ABET, Inc.

Faculty: Professor Tsiatas, *chairperson.*

Professors Lee, Veyera, and R. Wright; Associate Professors Baxter, Gindy, Hunter, Karamanlidis, Thiem, and Thomas; Assistant Professor Craver; Adjunct Professors Baird, Harr, and T. Wright; Adjunct Associate Professors Apostol and O'Neill; Adjunct Assistant Professors Badorek, George, and Osborn; Professors Emeriti Kovacs, Marcus, McEwen, Poon, and Urish.

Department Mission Statement. Consistent with the missions of the University of Rhode Island and the College of Engineering, the Department of Civil and Environmental Engineering 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 and research opportunities; provide an environment that encourages and supports faculty career development and professional/community service; actively promote diversity; and maintain a nationally recognized research program.

Bachelor of Science in Civil Engineering (BSCE) Program Mission Statement. Consistent with the mission of the Department of Civil and Environmental Engineering, the BSCE Program will prepare graduates for

successful careers, advanced studies at the graduate level, and lifelong learning based upon a solid foundation of technical ability, high standards of professional ethics, and strong communication skills.

BSCE 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.

BSCE Program Outcomes. URI's BSCE program will prepare graduates for successful careers and advanced graduate studies based upon a solid foundation of technical ability, high standards of professional ethics, and strong communication skills. Program outcomes describe what the students are expected to know and have the ability to do by the time of graduation. The attainment of these outcomes indicates that the student is equipped to achieve the BSCE program educational objectives. The outcomes for the BSCE program are as follows:

- 1) An appropriate fundamental understanding of mathematics, physics, chemistry, geology, and other basic sciences.
- 2) Basic computer skills consistent with application to civil engineering problem-solving.

3) Basic engineering knowledge across a range of subjects including mechanics, mechanics of materials, engineering construction materials, statics, dynamics, fluid mechanics, and CADD.

4) An understanding of basic economics, together with approaches to economics-based decision-making.

5) A working knowledge of probability and statistics as applied to civil engineering problems.

6) Basic technical proficiency in at least four of the recognized civil engineering focus areas.

7) An understanding of the interdisciplinary approach in civil engineering problem-solving and design at the design project level through an integrated **capstone** design project experience.

8) Experience with individual and team-based approaches to civil engineering problem solving in the classroom, laboratory, and through an integrated **capstone** design project experience.

9) Practical and hands-on laboratory experience solving civil engineering problems involving measuring physical phenomena and interpreting results.

10) An understanding of ethics of engineering activities, professional standards and responsibilities, the relationships between engineering and society in general, and the necessity for lifelong learning.

11) Well-developed written communication skills, and experience with oral communications, both individually and on teams.

12) 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 communications.

13) An opportunity to obtain membership in and become active in the student chapter of the American Society of Civil Engineers, develop teamwork and leadership skills, and participate in service activities related to the local community and the civil engineering professional society.

Civil engineers are responsible for researching, developing, planning, designing, constructing, and managing many of the complex systems and facilities essential to modern civilization. These include environmental engineering systems; water supply and pollution control systems; all types of transportation systems, from pipelines to city streets; structural systems from residential buildings to city skyscrapers, power plants, and offshore platforms; and all types of geotechnical systems from foundations to dams. Civil engineers play important roles in planning and administration with government agencies at all levels, especially those dealing with public works, transportation, environmental control, water supply, and energy.

The curriculum provides students with an excellent background to pursue graduate study or to enter directly into professional practice in industry or government after graduation. The first year is devoted largely to courses in mathematics, chemistry, physics, and engineering science common to all engineering curriculums. During the sophomore year, students take three courses in civil engineering including mechanics of materials and two laboratories. In their last two years, students develop a proficiency in environmental engineering, geotechnical engineering, structural engineering, and transportation engineering. They can also meet their own professional goals through the selection of professional electives in these areas as well as construction management. Professional electives are selected in consultation with the student's advisor to satisfy ABET, Inc.'s accreditation requirements.

The major requires 128 credits.

Freshman Year

First semester: 16 credits

CHM 101 (3), 102 (1); EGR 105 (1); MTH 141 (4); PHY 203 (3), 273 (1), and general education requirement (3).

Second semester: 16 credits

EGR 106 (2); MTH 142 (4); PHY 204 (3), 274 (1); ECN 201 (3) (S), and general education requirement (3).

Sophomore Year

First semester: 17 credits

CVE 205 (1); MCE 262 (3); MTH 243 (3), GEO 103 (4); and general education requirements (6).

Second semester: 16 credits

CVE 220 (3), 230 (1); MCE 263 (3); MTH 244 (3), and general education requirements (6).

Junior Year

First semester: 17 credits

CVE 346 (3), 354 (3), 355 (1), 374 (3), 381 (3), 382 (1), and MCE 354 (3).

Second semester: 17 credits

CVE 370 (3), 375 (1), 347 (3), 348 (1); STA 409 (3), general education requirement (3), and one 3-credit engineering elective (details follow).

Senior Year

First semester: 14 credits

CVE 465 (3), 497 [**capstone**] (2), general education requirement (3), and two 3-credit professional electives (details follow).

Second semester: 15 credits

CVE 483 (3), 498 [**capstone**] (3), free elective (3), and two 3-credit professional electives (details follow).

Electives. Three of the twelve credits of required professional electives must be selected from the following courses: CVE 470, 471, 475, 478. The remaining nine credits are to be selected from the list in the Civil Engineering Undergraduate Student Handbook. It is recommended that students consider selecting from the Civil Engineering professional elective courses to satisfy the free elective requirement. The three credits of engineering electives are to be selected from the list in the Civil Engineering Undergraduate Student Handbook.

Computer Engineering

The Bachelor of Science (B.S.) degree in computer engineering is offered by the Department of Electrical, Computer, and Biomedical Engineering and is accredited by ABET, Inc. Specialization in computer engineering is also available within the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) programs in electrical engineering.

Coordinator: Professor Lo (Electrical, Computer, and Biomedical Engineering). Professors Ohley and Qing Yang; Associate Professor Sendag; Assistant Professor Yan Sun; Professor-in-Residence Uht.

Program Educational Objectives. The objectives of the computer-engineering program at URI are the following:

- 1) Produce graduates who are able to practice computer engineering to serve government agencies and state, regional, national, and international industries.
- 2) Produce graduates with the necessary background and technical skills to work professionally in one or more of the following areas: computer hardware and software design, computer-based systems, network design, system integration, or electronic design automation.
- 3) Prepare graduates for personal and professional success with awareness and commitment to their ethical and social responsibilities, both as individuals and in team environments.
- 4) Prepare graduates who are capable of entering and succeeding in an advanced degree program in a field such as engineering, science, or business.

Program Description. Digital computer and communication systems have transformed society in a profound way. The examples range from super powerful scientific computers, the Internet and the World Wide Web, to cell phones and smart cards. Traditionally, computer engineering has been a discipline that combines both electrical engineering and computer science. The URI computer engineering program is thus

designed so the students will have a strong foundation in the relevant fields of electrical engineering and computer science, while establishing themselves with the latest computer engineering topics, such as advanced computer system architecture, design and programming, computer communication, electronic design automation, and high-level digital design methodologies.

The computer engineering core courses can be categorized as follows: (1) ELE 208/209, 305, and 408/409 are core courses for computer system architecture and hardware and software organization and interaction. (2) ELE 201/202, 306/307, and 405/406 are the core courses for digital design with electronic design automation and rapid prototyping, and for computer system integration. (3) ELE 313 and 437 and CSC 412 are core courses for computer communication and networks. The computer engineering program has two computer engineering electives and one free elective in the senior year so students can further expand into areas such as signals and systems, digital control, electronics, and computer software.

The computer engineering program culminates in the senior year with two major design experiences. First, ELE 408/409 is where all the skills accumulated through the curriculum will be employed in a group senior design project. Second, ELE 480 and 481 provide each student with the opportunity to work in a multi-disciplinary team in a senior **capstone** design project.

Graduates from the program go on to positions in both government agencies and the private sector, or enter graduate school for further study. Many computer engineering undergraduate students work with faculty on research projects before entering graduate school.

To transfer from University College to the College of Engineering's computer engineering program, students must have completed *all science, mathematics, and engineering courses required during the first two semesters* with a grade point average of 2.00 or better.

Minimum Requirements

Humanities and Social Sciences (27 credits): see the general education requirements for the College of Engineering. Students should consult their advisors regarding distribution of credits and approved courses. (ECN 201 is included in the 27-credit total.)

Mathematics (20 credits): MTH 141, 142, 243, 362, 447, 451.

Basic Sciences (12 credits): CHM 101, 102; PHY 203, 273, 204, 274.

Computer Science (at least 8 credits): CSC 211, 212, and CE electives.

Engineering Sciences and Design (44 credits): ELE 201/202, 208/209, 212, 215, 301/302, 305, 313, 338/339, 400, 405/406, 408/409, 437, 480, 481.

Computer Engineering Elective (9–12 credits): Three courses from: BME 464/465, any ELE 300- to 400-level course not otherwise required by the major, any ELE 500-level course with petition, and CSC 301, 305, 402, 406, 412, 415, 436, 481, 485, and 486.

Free Elective (3 credits): Any course may be used as a free elective.

College of Engineering (3 credits): EGR 105, 106.

The major requires 126–129 credits.

Freshman Year

First semester: 16 credits

MTH 141 (4); CHM 101 (3), 102 (1); PHY 203 (3), 273 (1); EGR 105 (1), and general education requirement (3).

Second semester: 16 credits

ELE 208 (2), 209 (1); MTH 142 (4); PHY 204 (3), 274 (1); ECN 201 (3), and EGR 106 (2).

Sophomore Year

First semester: 17 credits

ELE 201 (3), 202 (1); MTH 362 (3); CSC 211 (4), and general education requirements (6).

Second semester: 15 credits

ELE 212 (3), 215 (2); MTH 243 (3); CSC 212 (4), and general education requirement (3).

Junior Year

First semester: 16 credits

ELE 305 (3), 313 (3), 338 (3), 339 (1); MTH/CSC 447 (3), and general education requirement (3).

Second semester: 16–17 credits

ELE 301 (3), 302 (1); MTH 451 (3); computer engineering elective (3–4; details follow), and general education requirements (6).

Senior Year: (30–32 credits)

ELE 400 (1), 405 (3), 406 (1), 408 (3), 409 (1), 437 (3), 480 (3), 481 (3), computer engineering elective (6–8; details follow), free elective (3), and general education requirement (3).

Electives. Nine or more credits from the following courses: BME 464/465; any ELE 300- or 400-level course not otherwise required by the major, any ELE 500-level course with petition, and CSC 301, 305, 402, 406, 412, 415, 436, 481, 485, 486. See your advisor for help in preparing a suitable senior-year program.

Minor in Computer Engineering. Students who are interested in pursuing a minor in computer engineering are encouraged to speak with the department chair to discuss course requirements.

Electrical Engineering

The Department of Electrical, Computer, and Biomedical Engineering offers a curriculum leading to the Bachelor of Science (B.S.) degree. The department also offers the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees.

Faculty: Professor Boudreaux-Bartels, *chairperson.* Professors Fischer, Jackson, Kay, Kumaresan, Lo, Mardix, Ohley, Ying Sun, Sunak, Swaszek, Vaccaro, and Q. Yang; Associate Professors Sendag and Vetter; Assistant Professors Besio, Huang, and Yan

Sun; Professor-in-Residence Uht; Adjunct Professors Banerjee and Cooley; Adjunct Assistant Professors Davis and Sepe; Professors Emeriti Daly, Haas, Lengyel, Lindgren, Mitra, Sadasiv, Spence, and Tufts.

Program Educational Objectives. The objectives of URI's electrical engineering program are the following:

1) Produce graduates who are able to practice electrical engineering to serve government agencies or state, regional, national, and international industries.

2) Produce graduates with the necessary background and technical skills to work professionally in one or more of the following areas: analog electronics, digital electronics, communication systems, computer-based systems, or control systems.

3) Prepare graduates for personal and professional success with awareness of and commitment to their ethical and social responsibilities, both as individuals and in team environments.

4) Prepare graduates who are capable of entering and succeeding in an advanced degree program in a field such as engineering, science, or business.

Program Description. Since electrical instrumentation is at the heart of modern science and technology, electrical engineers are employed not only in the computer, electronics, communications, and power industries, but also in diverse enterprises such as transportation, the chemical industry, large hospitals, and government laboratories.

The curriculum emphasizes the scientific basis of electrical engineering and the application of mathematical analysis to engineering problems. Work is required in network and systems theory, atomic physics and solid state, electromagnetic theory, and electronics. Creative use of scientific principles in problems of engineering design is stressed, particularly in the senior year. The development of computer hardware and software is a part of many electrical engineering courses.

Extensive laboratory work serves to bridge the gap between mathematical analysis and the real world of "hardware."

Separate undergraduate laboratories are available for electrical measurements, analog electronics, digital electronics, microprocessors, hardware description languages, embedded systems, control systems, optics, communications, and electronic materials.

Electrical engineering students should note that the four-year electrical engineering curriculum allows for three credits of completely free electives that do not have to satisfy any of the general education requirements. Although the natural science requirement will be satisfied automatically by courses specified in the electrical engineering curriculum, it is recommended that students take some additional courses in mathematics or physics for which the prerequisites have been satisfied.

To transfer from University College to the College of Engineering's electrical engineering program, students must have completed *all science, mathematics, and engineering courses required during the first two semesters* with a grade point average of 2.00 or better.

Minimum Requirements

Humanities and Social Sciences (27 credits): see the general education requirements for the College of Engineering. Students should consult their advisors regarding distribution of credits and approved courses. (ECN 201 is included in the 27-credit total.)

Mathematics (at least 14 credits): MTH 141, 142, 243, 362, and MTH 451 or ISE 411.

Basic Sciences (19 credits): CHM 101, 102; PHY 203, 273, 204, 274, 205, 275, 306.

Computer Science (4 credits): CSC 200.

Engineering Sciences and Design (58–63 credits): EGR 105, 106; ELE 201, 202, 205, 206, 212, 215, 301, 302, 313, 314, 322, 331, 338, 339, 343, 344, 400, 480, 481; ISE 411, three electrical engineering design electives (chosen from BME/ELE 461; BME 464/465; ELE 401/402, 405/406, 408/409, 423, 427/428, 432, 435/436, 437, 438, 444/445, 447/448, 457, 458/459; one of these courses must be chosen from ELE 408/409, 427/428, 436/437, 444/445, 447/448, 458/459).

Free Elective: (3 credits): Any course may be used as a free elective.

The major requires 128–130 credits.

Freshman Year

First semester: 16 credits

EGR 105 (1); CHM 101 (3), 102 (1); MTH 141 (4); PHY 203 (3), 273 (1), and general education requirement (3).

Second semester: 17 credits

EGR 106 (2); ECN 201 (3); MTH 142 (4); PHY 204 (3), 274 (1), and CSC 200 (4).

Sophomore Year

First semester: 17 credits

MTH 362 (3); PHY 205 (3), 275 (1); ELE 201 (3), 202 (1), and general education requirements (6).

Second semester: 17 credits

ELE 205 (2), 206 (1), 212 (3), 215 (2); MTH 243 (3); PHY 306 (3), and general education requirement (3).

Junior Year

First semester: 17 credits

ELE 313 (3), 331 (4), 338 (3), 339 (1); MTH 451 (3) or ISE 411 (3), and general education requirement (3).

Second semester: 15 credits

ELE 301 (3), 302 (1), 314 (3), 322 (4), 343 (3), and 344(1).

Senior Year

Total credits for two semesters: 29–31. See your advisor for help in preparing a suitable program.

ELE 400 (1), 480 (3), 481 (3), general education requirements (9), free elective (3), and three electrical engineering design electives (10–12; details follow).

Electrical Engineering Design Electives. May be chosen as any three of the following: BME 462/463, 464/465; ELE 401/402, 405/406, 408/409, 423, 427/428, 432, 435/436, 437, 438, 444/445, 447/448, 457, 458/459. However, one of the courses must be chosen from BME 462/463; ELE

408/409, 427/428, 435/436, 444/445, 447/448, 458/459.

Minor in Electrical Engineering. Students who are interested in pursuing a minor in electrical engineering are encouraged to speak with the department chair to discuss course requirements.

Industrial and Systems Engineering

The Department of Industrial and Systems Engineering offers an ABET, Inc.-accredited curriculum leading to the Bachelor of Science (B.S.) degree in industrial and systems engineering. The department also offers the Master of Science (M.S.) degree in systems engineering and the Doctor of Philosophy (Ph.D.) in industrial and systems engineering. In collaboration with the College of Business Administration, qualified students could choose to pursue a Master of Business Administration (M.B.A.) degree that will take one extra year following their completion of the B.S. in industrial and systems engineering.

Faculty: Professor Wang, *chair*. Professors Dewhurst and Sodhi; Associate Professor Maier-Sperdelozzi; Adjunct Professors Jones and Miller; Professors Emerti Boothroyd, Knight, and Nichols; Associate Professor Emeritus Shao.

Program Mission Statement. Consistent with the mission of the Department of Industrial and Systems Engineering, URI's B.S. program in industrial and systems engineering will prepare students for successful careers that require a foundation of technical ability, high ethical standards, and good communication skills.

Program Educational Objectives. Graduates of the industrial and systems engineering program will be:

1) Prepared to practice professionally in the fields of industrial and systems engineering for both manufacturing and service sectors, and able to work in a wide range of areas such as systems engineering, quality engineering, logistics, management

engineering, human factors, health care, and transportation.

2) Equipped with a foundation of technical ability, high ethical standards, and good communication skills for success in their future careers.

3) Prepared to successfully pursue advanced degrees through an environment that values both scholarly research and technical education.

Curriculum Objectives. Consistent with these program objectives, it is expected that graduates from the Bachelor of Science in Industrial and Systems Engineering will have:

1) appropriate fundamental understanding of mathematics, physics, chemistry and other basic sciences;

2) basic computer skills consistent with application to industrial and systems engineering problem solving;

3) basic engineering knowledge across a range of subjects including mechanics, materials, thermodynamics, and electrical circuits;

4) understanding of basic economics and accounting, together with approaches to economics based decision-making;

5) thorough grounding in probability and statistics as applied to industrial and systems engineering problems;

6) practice in designing, developing, and analyzing integrated systems that involve people, materials, equipment, and energy;

7) knowledge of basic manufacturing processes and the relationship between product design and manufacturing efficiency;

8) advanced knowledge in student-selected topics in industrial and systems engineering, manufacturing engineering, and other related disciplines;

9) experience with individual and team-based engineering problem solving;

10) practical and hands-on experience solving engineering problems involving measuring physical phenomena and interpreting results;

11) understanding of ethics of engineering activities;

12) understanding of the relationships between engineering and society in general;

13) understanding of the necessity for lifelong learning;

14) well-developed written communication skills and experiences of oral communications both individually and in groups; and

15) broad understanding of society in general by exposure to fine arts, literature, history, philosophy, social science, and foreign cultures.

Program Curriculum. The industrial and systems engineering curriculum is designed to provide significant strength in mathematics, basic science, and engineering science, together with a carefully coordinated set of courses of particular importance to the professional industrial or systems engineer. Fundamental manufacturing processes, economics, statistics, quality systems, and mathematical and computer modeling of production and service systems are included.

The major requires 125 credits.

Freshman Year

First semester: 16 credits

CHM 101 (3), 102 (1); PHY 203 (3), 273 (1); EGR 105 (1); MTH 141 (4), and general education requirement (3).

Second semester: 16 credits

ECN 201 (3); EGR 106 (2); MTH 142 (4); PHY 204 (3), 274 (1), and general education requirement (3).

Sophomore Year

First semester: 17 credits

ISE 240 (3), 241 (1); MCE 262 (3); MTH 243 (3); PHY 2055 (3), 275 (1).

Second semester: 16 credits

CVE 220 (3); ELE 220 (3); ISE 220 (1); MCE 263 (3); MTH 362 or 244 (3), and general education requirement (3).

Junior Year

First semester: 15 credits

CHE 333 (3); EGR 316 or PHL 212 (3); ISE 325 (3), 411 (3), 432 (3).

Second semester: 15 credits

BUS 201 (3); ISE 404 (3), 412 (3), 433 (3), and professional elective (3).

Senior Year

First semester: 15 credits

ISE 451 (3), professional elective (3), free elective (3), and general education requirements (6).

Second semester: 15 credits

ISE 452 (3), professional electives (6), and general education requirements (6).

General education (indicated in several places above) refers to the electives in the University's general education program, required in all curriculums leading to a bachelor's degree.

Mechanical Engineering

The Department of Mechanical Engineering and Applied Mechanics offers a curriculum leading to the B.S. degree in mechanical engineering. The B.S. degree in mechanical engineering is accredited by ABET, Inc. The department also offers the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in mechanical engineering and applied mechanics.

Faculty: Professor Taggart, *chair*. Professors Chelidze, Datsaris, Faghri, Ghonem, Jouaneh, Palm, Sadd, Shukla, and Zhang; Associate Professors Meyer and Rousseau; Assistant Professor Park; Adjunct Professor Anagnostopoulos.

Department Mission and Program Objectives

URI's Mechanical Engineering department fully follows the college's mission statement. The University's mechanical engineering program is more than just a collection of courses and credit hours; it has been carefully designed to prepare students for the profession of mechanical engineering through study, experience, and practice. Although strong educational objectives existed in the program for many years, the department recently carefully reviewed and redeveloped its objectives and outcomes.

Program Educational Objectives. These are related to career and professional accomplishments that the program prepares students to achieve after graduation.

1) Produce graduates who are able to successfully practice mechanical engineering to serve state, local, national, and international industries and government agencies.

2) Produce graduates with the necessary background and technical skills to work professionally as individuals or in teams in the two major stems of mechanical engineering including mechanical and thermal systems.

3) Prepare graduates for personal and professional success with an understanding and appreciation of ethical behavior, social responsibility, and diversity, both as individuals and in team environments.

4) Prepare graduates to be interested, motivated, and capable of pursuing continued lifelong learning through further graduate education, short courses, or other training programs in engineering or related fields.

Desired Program Outcomes. Mechanical engineering students demonstrate knowledge in all the outcomes required by ABET, Inc. and listed in the College of Engineering's description.

The curriculum provides a thorough and well-rounded foundation in basic science, mathematics, engineering science, and general education to prepare the graduate for a professional engineering career. The curriculum is also excellent preparation for graduate school. The program is strong in providing a background in design, solid and fluid mechanics, systems engineering, and the thermal sciences, including energy and energy transfer. Computer applications are stressed throughout the curriculum. All undergraduates are invited and encouraged to join the student section of the American Society of Mechanical Engineers, which sponsors industrial plant visits, special lectures, and other activities. Students may also join chapters of the Society of Automotive Engineers and the Society for Experimental Mechanics.

The work in the first two years consists of basic courses in science (math, physics, chemistry), applied science (mechanics, electricity and magnetism, basic computer literacy and computer-aided problem solving), manufacturing processes, and general education requirements (humanities, social sciences, English communication). A pair of introductory engineering courses are included in the freshman year.

The junior year concentrates on fundamental courses in mechanical engineering (thermodynamics, fluid mechanics, systems engineering, engineering analysis, heat transfer), materials sciences, and design of machines. Further general education studies are also covered.

The senior year in mechanical engineering includes the capstone design sequence, mechanical engineering experimentation, and a wide variety of professional electives such as mechanical control systems, advanced fluid mechanics, advanced mechanics of materials, mechatronics, internal combustion engines, applied energy conversion, tribology, product design for manufacture, air conditioning, heating and ventilation, vibrations, finite element method, and experimental stress analysis. The program also includes two laboratory courses in the junior and senior years, which introduce experimental techniques and provide practical experience with the engineering phenomena covered in the classroom.

Computer techniques are integrated throughout the curriculum. Computational facilities including personal computers and workstations are available in the College of Engineering's Computer Center and the University's Office of Information Services. The department's computer classroom provides state-of-the-art hardware and software for simulation, design, and product development.

To receive the Bachelor of Science degree in mechanical engineering, the student must satisfactorily complete all the courses in the following curriculum, which requires 130 credits.

Freshman Year

First semester: 16 credits

CHM 101 (3), 102 (1); EGR 105 (1); MTH 141 (4); PHY 203 (3), 273 (1), and a general education requirement (3).

Second semester: 16 credits

ECN 201 (3); EGR 106 (2); MTH 142 (4); PHY 204 (3), 274 (1) and a general education requirement (3).

Sophomore Year

First semester: 17 credits

MCE 201 (3), 262 (3); MTH 243 (3); PHY 205 (3), 275 (1); ISE 240 (3) and 241 (1).

Second semester: 15 credits

CVE 220 (3); ELE 220 (3); MCE 263 (3); MTH 244 (3), and general education requirement (3).

Junior Year

First semester: 18 credits

CHE 333 (3); MCE 301 (3), 341 (3), 354 (3), 372 (3); and general education requirement (3).

Second semester: 18 credits

MCE 302 (3), 313 (3), 366 (3), 448 (3), and general education requirements (6).

Senior Year

First semester: 15 credits

MCE 401 [**capstone**] (3), 414 (3), professional electives (6; details follow), and general education requirement (3).

Second semester: 15 credits

MCE 402 [**capstone**] (3), professional electives (6; details follow), free elective (3), and general education requirement (3).

Professional Electives. Must be satisfied by a minimum of three three-credit elective courses in mechanical engineering, two of which must be taken at URI. The fourth course may be a 300-, 400-, or 500-level course offered by: the College of Engineering; or the Departments of Chemistry, Computer Science and Statistics, or Physics; or the Department of Mathematics (one

400- or 500-level course). Professional elective courses taken outside URI are subject to URI rules on transfer credit and require prior written approval.

Ocean Engineering

The Department of Ocean Engineering offers a curriculum leading to the Bachelor of Science (B.S.) degree in ocean engineering; this program is accredited by ABET, Inc. and is open to qualified students under the New England Regional Student Program. URI's Department of Ocean Engineering is nationally and internationally recognized as one of the leaders in ocean engineering, and also offers Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees.

Faculty: Professor Miller, *chairperson.*

Professors S. Grilli, Hu, Moran, Spaulding, Stepanishen, and Tyce; Associate Professor Baxter; Assistant Professor Roman; Associate Research Professor Vincent; Assistant Research Professors A. Grilli and Potty; Adjunct Professors Coriveau, Muench, Sharpe, and Shonting; Adjunct Assistant Professors Cousins and Newman; Professors Emeriti Kowalski, Middleton, and Silva.

Department Mission Statement and Educational Objectives. The Department of Ocean Engineering's missions are to provide high-quality undergraduate and graduate degree programs that prepare our students for professional careers in ocean engineering in industry, academia, and government; to develop and maintain internationally recognized research programs in selected areas of ocean engineering; to actively serve the profession and community in our areas of expertise; and to provide a challenging work and learning environment where diversity, community, scholarship, professional development, and excellence are valued and rewarded. The program is designed to provide students with a strong base in fundamental sciences, mathematics, and engineering; a broad base in ocean engineering; opportunities for the integration of theory, experimentation, and design; appreciation of ethical, social,

and environmental issues in the practice of the profession; and strong oral and written communication skills.

Program Educational Objectives. The educational objectives for the ocean engineering B.S. program have been developed in consultation with the department's advisory board, alumni, graduate employers, and students. Graduates are prepared to:

1) Gain employment with private or government organizations and advance to positions of increased responsibility, or pursue an advanced degree in an engineering program.

2) Work in one of the specialty areas within the broad field of ocean engineering including ocean instrumentation, hydrostatics, ocean waves, underwater acoustics, marine structures, marine geomechanics, and ocean engineering design.

3) Behave ethically, contribute to society, participate in strengthening a diverse engineering professional environment, and succeed in diverse workplaces, nationally and internationally.

URI's curriculum provides a basic ocean engineering program that gives students a firm base in engineering fundamentals and prepares them for direct entry into a professional career or continued study toward a graduate degree. The required ocean engineering courses begin at the freshman level and include laboratory, analysis, and design courses. There is a strong emphasis on the application of scientific principles in the ocean environment gained through laboratory courses. Experiments covering several basic areas are employed and provide an integrated approach to investigations into ocean phenomena and processes. Students are involved in the planning and execution of experiments, including collection and analysis of data and the reporting of results. This hands-on experience provides graduates with an understanding of ocean engineering activities in scientific and industrial fields. Two ocean engineering professional elective courses are also required.

The broad-based program exposes students to the following topics: ocean instrumentation and data analysis, underwater and sub-bottom acoustics, marine hydrodynamics, coastal and near shore processes, marine geomechanics, coastal and offshore structures, and corrosion.

To ensure that each student gains an in-depth knowledge of one of the ocean engineering disciplines, the curriculum allows sequences of courses in hydrodynamics, structures, geomechanics, acoustics, instrumentation, and data analysis. An Ocean Systems Design Project course in the senior year integrates previously obtained knowledge in a comprehensive design project. This experience may be obtained through an on-campus course, by participating in an ongoing research project, or through an off-campus internship in an ocean-oriented private company or government laboratory; this internship allows interested students to take advantage of the many opportunities available in the region.

The Department of Ocean Engineering is located at the University's Narragansett Bay Campus. Computational facilities include personal computer and workstation rooms networked and connected to the Engineering Computer Laboratory and Office of Information Services. Extensive laboratory facilities are also available. The department often utilizes an 80-foot research vessel equipped with a fully integrated side-scan sonar and sub-bottom mapping system; this vessel is used for both lab courses and research. A remotely-operated vehicle is operated by the department. A 100-foot tow and wave tank and a large acoustics tank are located on the Bay Campus, as well as an electronics shop, machine shop, and the Marine Geomechanics Laboratory. These facilities are available to undergraduates for course work, research, and independent study.

This major requires 130 credits.

Freshman Year

First semester: 16 credits

CHM 101 (3), 102 (1); EGR 105 (1); MTH 141 (4); PHY 203 (3), 273 (1); and general education elective (3).

Second semester: 17 credits

ECN 201 (3); EGR 106 (2); MTH 142 (4); OCE 101 (1); PHY 204 (3), 274 (1); and general education requirements (3).

Sophomore Year

First semester: 17 credits

MCE 262 (3); MTH 243 (3); OCE 205 (3), 215 (1); PHY 205 (3), 275 (1); and general education elective (3).

Second semester: 16 credits

CVE 220 (3); MCE 263 (3); MTH 244 (3); OCE 206 (3), 216 (1); and free elective (3).

Junior Year

First semester: 16 credits

MCE 354 (3); OCE 301 (4), 310 (3); professional elective (3; details follow), and general education elective (3).

Second semester: 16 credits

EGR 316 (3); OCE 307 (3), 311 (4), 471 (3); and general education elective (3).

Senior Year

First semester: 17 credits

OCE 416 (2), 421 (3), 495¹ (3); CHE 333 (3); general education elective (3), and professional elective (3; details follow).

Second semester: 15 credits

OCE 496¹ (3); OCG 451 (3), professional electives (6; details follow), and general education elective (3).

Professional Electives. This requirement must be satisfied by a minimum of two approved three-credit elective courses at the 300-, 400-, or 500-level in engineering or oceanography and two approved three-credit courses in ocean engineering.

¹ An approved off-campus experience, usually between the junior and senior years, can be substituted for OCE 495 and 496.

COLLEGE OF THE ENVIRONMENT AND LIFE SCIENCES

Nancy L. Fey-Yensan, *Interim Dean*
Dennis W. Nixon, *Associate Dean*
Richard C. Rhodes III, *Associate Dean*

The College of the Environment and Life Sciences (CELS) offers undergraduate majors leading to three degrees: the Bachelor of Science (B.S.), the Bachelor of Arts (B.A.), and the Bachelor of Landscape Architecture (B.L.A.). The following majors are offered within the B.S. degree program: animal science and technology, aquaculture and fisheries technology, biological sciences, clinical laboratory science, environmental economics and management, environmental horticulture and turfgrass management, environmental science and management, geology and geological oceanography, geosciences, marine affairs, marine biology, microbiology, nutrition and dietetics, resource economics and commerce, and wildlife and conservation biology. Students may also obtain a B.A. in biology or marine affairs, or a B.L.A. in landscape architecture.

Options have been developed within certain majors to help students prepare for graduate study, professional training, or specialized careers. Entering freshmen and transfer students with fewer than 24 credits are admitted to University College and may choose a major in the College of the Environment and Life Sciences at that time.

Undergraduate students from any college may develop a minor from one of the majors offered by the College of the Environment and Life Sciences. Details can be worked out with an appropriate faculty advisor. In addition, most departments have an internship program for combining hands-on professional experience with academic credit.

CELS encourages students in all majors to pursue opportunities such as undergraduate research fellowships, internships, apprenticeships, and field studies that will complement their formal classroom learning.

The Department of Community Planning and Landscape Architecture offers a minor in community planning, which is described on page 36.

Faculty

Many faculty members hold a joint appointment with the Rhode Island Agricultural Experiment Service and the Rhode Island Cooperative Extension. These units represent the formal research and public service functions of the college and are funded with federal and state monies.

Biological Sciences: Professor Goldsmith, *chairperson*. Professors Bengtson, Bibb, Bullock, Fastovsky, Heppner, Kass-Simon, Killingbeck, Koske, A. Roberts, and Webb; Associate Professors Irvine, Katz, Norris, Seibel, and Wilga; Assistant Professors Lane, Preisser, Sartini, and Thornber; Adjunct Professors Carleton, Deacutis, Fogarty, Lauder, and Sanford; Adjunct Associate Professors Cromarty, Ewanchuk, Gemma, Orwig, T. Roberts, and Thursby; Adjunct Assistant Professor Roposa; Professors Emeriti Albert, Beckman, Caroselli, Cobb, Costantino, Goertemiller, Goos, Hammen, Harlin, Hauke, Hyland, Lepper, and Twombly; Associate Professor Emeritus Krueger; Research Professor Hill.

Cell and Molecular Biology: Professor Sperry, *chairperson*. Professors Bradley, Chandlee, P. Cohen, Goldsmith, Hufnagel, Kausch, D. Nelson, Seemann, and Sun; Associate Professors L. Martin, Mottinger, and J.H. Norris; Assistant Professors N. Howlett and B. Jenkins; Adjunct Professor Mehta; Adjunct Assistant Professors Bauer, Kaplan, and Luo; Professors Emeriti Cabelli, Carpenter, Hartman, Laux, Traxler, Tremblay, and Wood.

Clinical Laboratory Science: Clinical Professor Paquette, *director*. Adjunct Clinical Professors Allegra and Kenney; Adjunct Clinical Associate Professors Kessimian and Schwartz; Adjunct Clinical Assistant Professors Campbell, Gmuer, Goddu, Heelan, Ingersoll, Lewandowski, and Mello.

Community Planning: Professor Atash, *chairperson and program director*. Professor Feld; Associate Professors Feldman and Gordon. (Note: Admission to the Community Planning Program has been suspended effective June 30, 2005.)

Environmental and Natural Resource Economics: Professor J.L. Anderson, *chairperson*. Professors Grigalunas, Opaluch, Roheim, and Swallow; Associate Professor C. Anderson; Assistant Professors E. Uchida and H. Uchida; Adjunct Professors Asche, Edwards, Holland, Johnston, Mazzota, and Shogren; Professors Emeriti Gates, Sutinen, and T. Tyrrell.

Fisheries, Animal and Veterinary Science: Professor Bengtson, *chairperson*. Professors Bradley, Costa-Pierce, DeAlteris, Mallilo, Rhodes, and Rice; Associate Professor Gomez-Chiarri; Assistant Professors Peterson and Sartini; Lecturers Jones and Launer; Adjunct Professors Hoey, Klein-McPhee, Musik, and Smolowitz; Adjunct Associate Professors Colwill and Hare; Adjunct Assistant Professors Brumbaugh, Castro, Dudzinski, Hancock, Leavitt, Rheault, Schwartz, and Weatherbee; Adjunct Clinical Professor Serra; Professors Emeriti Chang, McCreight, Nippo, Recksiek, Wing, and Wolke.

Nutrition and Food Sciences: Professor English, *chairperson*. Professors Greene, C. Lee, and Patnoad; Associate Professors Fey-Yensan and Gerber; Assistant Professor Melanson; Adjunct Associate Professor Sebelia; Adjunct Assistant Professor Pivarnik; Professors Emeriti Caldwell, Constantinides, and Rand; Instructor Handley.

Geosciences: Associate Professor Veeger, *chairperson*. Professors Boothroyd, Cain, and Fastovsky; Associate Professor Boving; Assistant Professor Savage; Adjunct Professors Burks, Fischer, Hapke, Pockalny, and Spiegelman; Professors Emeriti Hermes and Murray.

Geology and Geological Oceanography: Associate Professor Veeger, *undergraduate advisor*. The faculty consists of the members of the Department of Geosciences and the

marine geology and geophysics faculty of the Graduate School of Oceanography.

Landscape Architecture: Associate Professor Green, *director*. Professor Simeoni; Associate Professor Sheridan; Adjunct Assistant Professors Bourbonnais and Weygand; Professor Emeritus Hanson.

Marine Affairs: Associate Professor Pollnac, *chairperson*. Professors Burroughs, Juda, Marti, and D. Nixon; Assistant Professors Macinko and Thompson; Professors Emeriti Alexander, Knauss, and West; Associate Professor Emeritus Krausse.

Natural Resources Science: Professor Paton, *chairperson*. Professors Amador, August, Forrester, Gold, Golet, Husband, McWilliams, Stolt, and Wang; Assistant Professors F. Meyerson and L. Meyerson; Adjunct Professors Paul and Perez; Adjunct Associate Professors Abedon, Cerrato, Gorres, Groffman, Nowicki, O'Connell, Reed, and Rockwell; Adjunct Assistant Professors Augeri, Dabek, Hollister, Jarecki, Kellogg, Lashomb, McKinney, Milstead, Peters, Rubinstein, Saltonstall, Steele, and Tefft; Professors Emeriti Brown and Wright.

Plant Sciences: Professor Maynard, *Interim chairperson*. Professors Alm, Casagrande, LeBrun, Mather, Ruemmele, and Sullivan; Associate Professor Englander; Assistant Professors Adkins, Brown, and Mitkowski; Professor-in-Residence Ginsberg; Adjunct Assistant Professors Dellaporta, Gettman, and Gordon; Professors Emeriti Beckman, Hull, Jackson, McGuire, and Mueller; Associate Professor Emeritus Krul; Adjunct Professor Emeritus Taylorson.

Curriculum Requirements for Majors

Bachelor of Arts. Students who pursue the B.A. in marine affairs or biology must fulfill the Basic Liberal Studies requirements of the College of Arts and Sciences (see page 50). Also see the listings under biology and marine affairs in this section.

Bachelor of Science. Most of the college's B.S. programs require a minimum of 130

credits for graduation, except when specified otherwise under the program description. Required courses come from three categories: general education requirements (36 credits); program requirements (77–85 credits); and free electives (6–12 credits).

The following outline gives the basic general education requirements for all students in the B.S. curriculum within the college. Individual programs may require that specific courses be selected.

English Communication (6 credits):
three credits in written communication from courses in Group Cw, and three credits in oral communication from communication studies.

Mathematics (3 credits)

Natural Sciences (6 credits)

Social Sciences (6 credits)

In addition, 15 credits must be chosen from:

Letters (3–6 credits)

Fine Arts and Literature (3–6 credits)

Foreign Language and Culture (3–6 credits)

Total: 36 credits.

Bachelor of Landscape Architecture.

For information on the curriculum requirements for URI's B.L.A. degree, see page 101.

Animal Science and Technology

This major, offered by the Department of Fisheries, Animal and Veterinary Science, is designed for students interested in applied animal science careers. Options are available to students interested in veterinary medicine, animal sciences, and laboratory animal science. Those students who intend to use their study in animal science as credentials for secondary-school teaching should also enroll in this major.

The major requires a minimum of seven credits in introductory animal science and genetics, three in biology, eight in inorganic chemistry, and three in mathematics. Also required are nine to 12 credits in basic science, 24 credits of concentration courses, and 26–29 credits of supporting electives approved for the major.

Animal Science Option. This option includes animal nutrition, physiology, behavior, and disease. Students will normally emphasize one or more of these areas. A strong preparatory background in the basic sciences is needed. Students in this option seek employment in technical areas and/or continue their studies in specialized graduate programs.

In addition to the requirements of the major, students choosing this option must complete the following basic science requirements: four to eight credits in organic chemistry, three in introductory calculus, and four in microbiology. A course in animal anatomy and physiology is required in the concentration. The remaining credit requirements will be selected from the concentration courses and supporting electives approved for this option.

Animal Management Option. Research techniques and procedures for animal care are emphasized along with a strong background in the sciences. Students with this training and animal experience would be employed in research and teaching facilities as animal technicians, animal technologists, supervisors of animal technicians, and assistant research project leaders.

In addition to the requirements of the major, students must complete the following basic science requirements: four to eight credits in organic chemistry, three in introductory calculus, four in microbiology, and three in statistical methods. Six credits in animal management, three credits in animal anatomy and physiology, and three credits of general nutrition are required in the concentration. The remaining credits will be selected from the concentration courses and supporting electives approved for this option.

Preveterinary Option. This option requires a demonstrated capability in the basic sciences and prepares students for admission to veterinary schools offering the D.V.M. degree. Because admission requirements among schools are not totally uniform and are subject to change, students should determine specific requirements of the schools in which they are interested. Those who are

not accepted for veterinary training will be well prepared to pursue graduate programs in animal physiology and health.

In addition to the requirements of the major, students must complete the following basic science requirements: eight-credit, two-semester sequence in organic chemistry, three credits in biochemistry, four in microbiology, eight in general physics, three in introductory calculus, and three in intermediate calculus or statistical methods in research. Four credits in animal anatomy and physiology are required in the concentration. The remaining credits will be selected from the concentration courses and supporting electives approved for this option.

Aquaculture and Fishery Technology

This major, offered by the Department of Fisheries, Animal and Veterinary Science (AFS), prepares students for professional or technical careers in aquaculture or fisheries-oriented occupations. It is sufficiently broad to allow for specialization in either fisheries or aquaculture science and technology. Students who demonstrate superior ability in the basic sciences and wish to continue their professional training can select a course curriculum that will both prepare them for graduate school and provide a broad overview in fisheries and aquaculture science and technology.

The major requires a minimum of twelve credits in introductory professional courses including natural resource conservation, fisheries or aquaculture, and resource economics; six to eight credits in animal and plant biology; four credits in general chemistry; four additional credits in general or organic chemistry; and nine to twelve additional credits in basic science selected from an approved course list in the departments of Biological Sciences, Chemistry, Computer Science and Statistics, Mathematics, and Physics. In addition, the major requires 24 credits in concentration courses at the 300 level or above, and 18 credits of the concentration courses must be selected from courses offered by AFS. The additional six

credits may be selected from courses offered in Biological Sciences; Fisheries, Animal and Veterinary Science; Nutrition and Food Sciences; Marine Affairs; Environmental and Natural Resource Economics; and by the Graduate School of Oceanography. Finally, the program requires 30–36 credits of supporting electives selected from an approved list of courses in the departments of Biological Sciences (botany and zoology); Fisheries, Animal and Veterinary Science; Marine Affairs; Environmental and Natural Resource Economics; Natural Resources Science; and the Graduate School of Oceanography.

Biology Biological Sciences Marine Biology

These programs are administered by the Department of Biological Sciences. A student may earn either the Bachelor of Arts (B.A.) degree in biology or the Bachelor of Science (B.S.) degree in biological sciences or marine biology. The department also offers the Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees in biological sciences.

BACHELOR OF ARTS (BIOLOGY)

Students selecting a major in biology must complete a minimum of 28 credits (maximum 45 credits) in biological sciences including the following courses: BIO 101 and 102 (8), and MIC 201 or 211 (4). They must also complete a minimum of three credits from each of the three lists (A, B, and C) below. The remaining nine credits may be selected from courses in biology and/or microbiology. Students in this major must elect a year of chemistry with laboratories. Up to three credits of independent study or special topics in the following disciplines may be applied toward this bachelor's degree: AFS, AVS, BCH, BIO, MIC, NRS, and PLS.

List A (Botanical): BIO 311, 321, 323, 332, 346, 348, 365, 418. *List B (Zoological):* BIO 121, 201, 242, 244, 286, 301, 302, 304, 327, 329, 334, 335, 354, 355, 366, 385,

386, 412, 441, 442, 445, 467, 469, 475. *List C (Combination of Botanical and Zoological):* BIO 262, 272, 341, 345, 352, 353, 360, 396, 437, 452, 453, 455, 457, 458, 472, 480, 491, 492.

Students in this major must fulfill the Basic Liberal Studies requirements of the College of Arts and Sciences. Students must take either six credits of a modern foreign language or the study of a modern foreign language through the intermediate (104) level. The requirement for a modern foreign language is not met by study abroad or by a culture cluster.

Those wishing to prepare for a professional career in the life sciences should enroll in the B.S. program (description follows).

Students must maintain a 2.00 grade point average in BIO or MIC courses used to meet graduation requirements. A total of 120 credits is required in the B.A. program. At least 42 credits must be in courses numbered 300 or above. Only three credits of 491, 492 may be used for biology elective.

BACHELOR OF SCIENCE (BIOLOGICAL SCIENCES)

BACHELOR OF SCIENCE (MARINE BIOLOGY)

These curricula provide a foundation in the fundamental principles of biology and marine biology, and are concerned with the application of biological science to problems of modern life. They also provide preparation for graduate work in biological fields including aquatic, environmental, and marine studies, molecular, cellular, and developmental biology, biological oceanography, genetics, and physiology, and preparation for admission to professional schools of medicine, dentistry, and veterinary medicine.

Students who know their professional goals are encouraged to declare a major as soon as possible to take advantage of help from department advisors. Students *must* declare their major when leaving University College.

Biological Sciences. A minimum of 35 credits in biology is required and must include BIO 101 and 102 (8). The remaining 27 credits must include at least one course from List A (Botanical) and one course from List B (Zoological). At least three laboratory courses beyond BIO 101 and 102 must be taken, excluding 491, 492, and 495. The 27 credits must include one course from at least four of the following six areas: Cell and Development (BIO 302, 311, 341, 453); Ecology and Evolution (BIO 262, 272); Genetics (BIO 352); Molecular Biology (BIO 437); Organismal Diversity (BIO 304, 321, 323, 354, 365, 366); Physiology (BIO 201, 242/244, 346).

In addition, students must take CHM 101, 102, 112, 114, 226, 227, 228 or 124, 126, and BCH 311; MIC 201 or 211; two semesters of introductory calculus or one semester of calculus and STA 308; PHY 111, 112, 185, and 186 or PHY 203, 204, 273, 274; WRT 104, 105, or 106 and three additional credits of English communication, three credits of fine arts, three credits of literature; and either six credits of a modern foreign language, or study of a modern foreign language through the intermediate (104) level. The requirement for a modern foreign language is not met by study abroad or a culture cluster. Students must follow University requirements for general education; no area may be reduced.

Students are encouraged to become involved in the department's research activities by arranging to register for assigned work as Special Problems (491, 492). Only three credits of 491, 492 may be used toward the B.S. degree. Up to three credits of independent study or special topics in the following disciplines may be applied toward this bachelor's degree: AFS, AVS, BCH, BIO, MIC, NRS, and PLS.

List A (Botanical): BIO 311, 321, 323, 332, 346, 348, 365, 418. *List B (Zoological):* BIO 121, 201, 242, 244, 301, 302, 304, 327, 329, 334, 335, 354, 355, 366, 385, 386, 441, 445, 467, 469, 475. *List C (Combination of Botanical and Zoological):* BIO 262, 272, 341, 345, 352, 353, 360, 396, 437, 452, 453, 455, 457, 458, 472, 480, 491, 492.

Students are strongly urged to consult the biological sciences advisors to obtain detailed programs of the various sub-disciplinary paths through the department most suited to their particular career goals.

Students must maintain a 2.00 grade point average in BIO courses used to meet graduation requirements. A total of 130 credits is required for graduation.

Marine Biology.

The Major. A minimum of 36 credits in biological sciences is required for the major and must include BIO 101, 102, 130, and 360. Of the remaining 23 credits, 12 credits must be earned by selecting one course from at least four of the following six areas: Cell and Developmental Biology (BIO 302, 311, 341, 453); Ecology and Evolution (BIO 262, 272); Genetics (BIO 352); Molecular Biology (BIO 437); Organismal Diversity (BIO 304, 321, 323, 354, 365, 366); Physiology (BIO 201, 346). The remaining 11 credits must be selected from the following, with no more than three credits of Special Problems to be applied to this requirement: BIO 345, 354, 355, 365, 412, 418, 441, 455, 457, 458, 469, 475, 491, 492, 495, 563; OCG 420, 576. Up to three credits of independent study or special topics in the following disciplines may be applied toward this bachelor's degree: AFS, AVS, BCH, BIO, MIC, NRS, and PLS. Students must take at least three laboratory courses in biological sciences (BIO) in addition to BIO 101 and 102 and excluding BIO 491, 492, and 495.

In addition, the student must take CHM 101, 102, 112, 114, and either CHM 226, 227, and 228 or CHM 124, 126, and BCH 311; two semesters of introductory calculus or one semester of calculus and STA 308; OCG 401 or 451; PHY 111, 112, 185, 186; WRT 104, 105, or 106 and three additional credits of English communication, three credits of fine arts, three credits of literature; and either six credits of a modern foreign language, or study of a modern foreign language through the intermediate (104) level. The requirement for a modern foreign language is not met by study abroad or by a culture cluster. Students must follow Uni-

versity requirements for general education; no area may be reduced.

Students must maintain a 2.00 grade point average in BIO courses used to meet graduation requirements. A total of 130 credits is required for graduation.

The Minor. The minor in marine biology requires at least 20 credits, including 8 credits of General Biology (BIO 101 and 102, or equivalent, e.g., Advanced Placement), Marine Biology (BIO 360), and at least 8 additional credits at the 200-level or above, chosen from among courses counted as marine biology electives for the B.S. degree in marine biology. A maximum of 3 credits in research (e.g., BIO 491, 492) may be counted towards the minor. At least half of the credits for the minor must be earned at URI. A minimum GPA of 2.00 must be earned in the credits required for the minor. *Application for a minor must be filed with the coordinator of the Marine Biology Program prior to the completion of the first semester of the senior year.*

Clinical Laboratory Science and Biotechnology Manufacturing

This major, offered by the Department of Cell and Molecular Biology, is designed to prepare students for applied careers in the medical laboratory, biomedical, and biotechnology sciences, as well as to prepare students for graduate or professional school. The department also offers the Master of Science (M.S.) degree.

There are two options in the program: Clinical Laboratory Science and Biotechnology Manufacturing. Students in both are required to take these courses: BIO 101 and 102, 121, and 242; CHM 101, 102, 112, 114, 226, 227, and 228 (or 124 and 126 for the Biotechnology option); PHY 111 and 185; MTC 102; MTH 111, 131, or 141; CSC 101 or 201; STA 307 or 309. A total of 130 credits is required for graduation.

Clinical Laboratory Science Option.

During the first three years, emphasis is on general education and on basic courses in the biological, chemical, and quantitative sciences. The courses of the senior year are

taught off campus by staff from affiliated hospital schools of clinical laboratory science. These schools are accredited by the National Accreditation Agency for Clinical Laboratory Sciences. The senior year is an 11-month clinical internship that begins in late July. It is taken at one or more of the following clinical agencies: Rhode Island Hospital, Miriam Hospital, Fatima Hospital, and the Rhode Island Blood Center. The clinical program includes lecture and laboratory instruction in clinical chemistry, clinical microbiology, hematology, immunology, immunohematology, and molecular pathology, and prepares the student for national certification examinations and state licensure.

Applicants to this curriculum should have completed 60 credits and taken most of the required courses by the end of the sophomore year. Students are selected for clinical internships by the departmental curriculum committee and by program officials of the hospital schools. Since the number of students is limited, interested students should consult with the program director early in their college career, so they will be familiar with the requirements and application procedures. Flexibility in the curriculum permits students who are not admitted to the program to fulfill requirements for the Bachelor of Science degree in one of several other concentrations in the department. Students with a degree in a health profession, life science, or related field may apply to the clinical internship as a fifth year of study.

Required courses: MTC 102, 405, 406, 407, 409, 410, 411, 412, 413, 414, 415, 416, and 483; MIC 201 or 211, 333, 432; BCH 311 and 437.

Freshman Year

First semester: 14–15 credits

CHM 101, 102 (4); BIO 101 or 102 (4); MTH 111 or 131 (3) or 141 (4); and one general education requirement (3).

Second semester: 16 credits

CHM 112, 114 (4); BIO 101 or 102 (4); CSC 101 or 201 (4); MTC 102 (1); and one general education requirement (3).

Sophomore Year

First semester: 18 credits

BIO 121 (4); CHM 227 (3); PHY 111, 185 (4); MIC 211 or 201 (4); and general education requirements (3).

Second semester: 17 credits

BIO 242 (3); CHM 226, 228 (5); general education requirements (6) and free elective (3).

Junior Year

First semester: 15 credits

MIC 333 (3); MTC 483 (3); and general education requirements (9).

Second semester: 12 credits

MIC 432 (3); BCH 311 (3); STA 307 or 308 (3); and electives (3).

Senior Year

First semester: 17 credits

MTC 405 (2), 409 (4), 411 (4), 413 (2), 415 (3), and 451 (2).

Second semester: 15 credits

MTC 406 (2), 410 (4), 412 (4), 414 (2), and 416 (3).

Biotechnology Manufacturing Option.

This option is designed to prepare students for professional careers in the biotechnology and biomedical industries in the areas of manufacturing, processing, operations, and technical support. This option is based at the Providence Campus and includes a 12-credit clinical internship at a regional biotechnology or biomedical company.

Students should be aware that internships may be limited in number and are awarded on a competitive basis. Students are selected by the departmental curriculum committee and by program officials of affiliated companies. Students interested in this option should consult with the program director early in their college career, so that they will be familiar with the requirements and application procedures. Flexibility in the curriculum permits students who are not admitted to the program to fulfill requirements for the Bachelor of Science degree in

one of several other concentrations in the department.

Required courses: MTC 195, 199; MIC 190 and 201 or 211; BCH 311, 437, and 453. The program is structured to provide intensive professional and clinical training in the first year of the program so the student may enter the professional field while still pursuing the degree. The remainder of the program may be completed on a full-time or reduced-time basis. The electives, in consultation with the program director and appropriate department officials, may be utilized to create personalized specializations and/or minors in management, training and development, information technology, bioengineering, and related areas. The recommended program for the first year is:

Freshman Year

First Semester: 16 credits

BIO 101 (4); CHM 101 (3) and 102 (1); MIC 190 (3) and 211 (4); and URI 101 (1).

Second Semester: 17 credits

BIO 102 (4), 242 (3); CHM 124, 126 (4); MTC 102 and 195 (3); WRT 333 (3).

Summer Session: 12 credits

MTC 199 (12)

Environmental Economics and Management

This major prepares students for professional careers in the public and private sector that address environmental and natural resource management, business, or public policy. This interdisciplinary major is offered jointly by the Department of Environmental and Natural Resource Economics and the Department of Natural Resources Science. Students develop a foundation in both natural and social sciences to understand the interactions between human society and our natural or environmental resources. Environmental economics and management majors seek careers that address the interface between the economic system and the ecological or environmental

systems. For example, economic incentives and values can drive individual decisions to use forest, land, water, or air resources, which can in turn cause ecosystem management problems. Public officials, nonprofit organizations, and private businesses need professionals to integrate the ecological and natural science with the economic science aspects of their organizations. Such professionals play an important role in coordinating an interdisciplinary team to address such complex problems. Graduates gain an understanding of both natural sciences and the economy.

The degree requires a minimum of 120 credit hours, including a minimum of 24 credit hours in the concentration credits for this interdisciplinary major. The program is designed as a blend of the existing majors of environmental science and management and resource economics and commerce. In addition to satisfying the general education requirements, students need 12 credits in introductory professional courses, including natural resource conservation, introductory resource economics, introductory soils, and resource management. As part of the basic science requirements, majors must complete eight credits in biological sciences (four in general botany, four in general zoology); three credits in introductory ecology; four credits in introductory physics; four credits in physical geology; four credits each in organic and inorganic chemistry; three credits in introductory calculus; and three credits in introductory statistics. Within the 24-credit concentration, students are required to take two courses in forestry and wildlife and two courses in water and soil for a minimum of 12 credits in these natural sciences. A minimum of 12 concentration credits are required in environmental and resource economics (listed under Resource Economics, REN), including economics for environmental resource management and policy and economics of land and water resources, as well as two other courses selected according to the student's particular interests. The major also requires a minimum of nine credits in communication skills beyond the general education

requirements. Finally, students may choose a minimum of nine credits in supporting electives and six credits in free electives.

Environmental Horticulture and Turfgrass Management

The major in environmental horticulture and turfgrass management, offered by the Department of Plant Sciences, is intended to educate students in the sciences, both natural and social, in preparation for professional careers in the many fields of environmental horticulture. Graduates of this program may pursue careers as landscape contractors, golf course superintendents, directors of park systems and arboreta, proprietors of garden centers and floral shops, plant propagators, nursery personnel, vegetable and fruit growers, managers of lawn service firms, horticultural therapists, and technical representatives for seed, equipment, and chemical companies, to name just a few of the opportunities available. Others may enter graduate school and pursue careers in research and education in both public and private institutions. This program has as its unifying theme the culture and use of plants that enhance the human environment.

URI's Department of Plant Sciences operates 50 acres of turfgrass, horticulture, and plant science research and education farm centers. The C. Richard Skogley Turfgrass Center is the oldest turfgrass research and teaching program in the U.S. Also included in the department's facilities are five research laboratories, controlled environment facilities, a greenhouse complex, and a biotechnology initiative for hands-on opportunities. The department is closely allied with the URI Botanical Gardens and E.P. Christopher Arboretum.

Depending on the area of specialization, graduates can meet the standards of several certification organizations. Environmental horticulture students qualify for certification with the Rhode Island Nursery and Landscape Association and International Society for Arboriculture. Graduates specializing in turfgrass management qualify for certification as turfgrass managers or turfgrass specialists with the American Registry of

Certified Professionals in Agronomy, Crops, and Soils, Ltd. of the American Society of Agronomy. These same graduates also meet the requirements for registration with the Golf Course Superintendents Association of America.

The major requires 24 credits of preprofessional natural science courses, including six in general education; 40 credits in concentration courses; and 18 credits of supporting electives selected from an approved course list, with permission of the advisor. Included among these electives are business and management courses, as well as advanced offerings in plant science, botany, and soil science. Many students minor in business management.

Environmental Science and Management

The major in environmental science and management, offered by the Department of Natural Resources Science, prepares undergraduate students for professional careers in the public and private sectors of natural resources management. Flexible course requirements allow students to develop individual areas of concentration and prepare for a variety of positions in environmental management after graduation. This major is also suitable for students who wish to become certified as teachers of environmental science and natural resources at the secondary level. In addition, the program provides a solid background for graduate study in several more specialized environmental science disciplines. Environmental science majors may meet the educational requirements for state and federal employment as biologists, natural resource specialists, environmental scientists, and other classifications.

The major requires 13 credits of professional courses, which include natural resource conservation, seminar in natural resources, resource economics, introductory soil science, and conservation of populations and ecosystems. As part of the basic science requirements, environmental science and management majors must complete six to eight credits in introductory

biological sciences; three credits in introductory ecology; four credits in introductory physics; four credits in physical geology; three to four credits in introductory biochemistry, introductory microbiology, or geomorphology; eight credits in introductory chemistry; four credits in organic chemistry; three credits in introductory calculus; and three credits in introductory statistics. Required concentration courses (26 credits) must be taken at the 300 level or above; at least 21 credits must be selected from courses offered by the Department of Natural Resources Science.

In addition, one course must be selected from each of the following groups: biological and ecological science; watershed and environmental quality; methods in environmental science; natural resources management; and land use management. These and the remaining concentration credits should be selected from courses offered by the Department of Natural Resources Science or from an approved list of courses; at least nine credits must be selected from NRS courses. Supporting electives (18–21 credits) must be selected from an approved list of courses, mostly at the 300 and 400 levels. Up to 24 credits of experiential learning courses may be taken toward satisfying concentration (letter grade courses only) and supporting elective requirements. NRS 402, 403, 423, 425, 450, 452, 522, and 524 are the **capstone** experiences in this major.

Geology and Geological Oceanography

This major, offered by the Department of Geosciences and the Graduate School of Oceanography, includes a comprehensive background in geology and a solid introduction to geological oceanography. The curriculum includes the full set of chemistry, physics, biology, and mathematics courses required for a B.S. in geosciences (see below). Students in the program will be advised jointly by geosciences and oceanography faculty members.

A senior research project will be taken in the Graduate School of Oceanography

(GSO) as OCG 493 or 494 [**capstones**], under the direction of a GSO faculty member. Three courses in oceanography—OCG 401 or 451, 540, and one additional OCG course at the 400 level or above selected by the student in conjunction with the advisor—will provide the student with a good overview of his or her intended field, and also relieve the student of two required courses if he or she continues on to study oceanography at the graduate level at the University of Rhode Island. In addition to this, the student may find opportunities for summer employment or participation in oceanographic research cruises after his or her junior year.

Students completing this program of study will be well prepared to pursue careers in either conventional geology or geological oceanography. Technical positions in private or government oceanographic laboratories are available for geological oceanographers with bachelor's degrees. Students who pursue graduate studies can expect to find a high demand for geological oceanographers with advanced degrees. Students entering the URI Graduate School of Oceanography from this program will have a significant head start compared with those entering from most other undergraduate institutions.

The following core courses are required: GEO 103 (4), 204 (4), 210 (4), 320 (4), 370 (4), 450 (4), 483 (4), either an approved summer field camp (GEO 480 [**capstone**]) for a four to six credits or an approved field experience (prior approval required), two approved geosciences electives (at the 200-level or above); OCG 401 (3) or 451 (3), OCG 540 (3), OCG 493 or 494 [**capstones**] (3); and one additional OCG course at the 400 level or above. Students must also take the following supporting course work: MTH 131 (3) or 141 (4); MTH 132 (3) or 142 (4); BIO 101 (4) and 102 (4); CHM 101 (3), 102 (1) and 112 (3), 114 (1); CSC 201 (4) or STA 308 (3); PHY 111 (3), 185 (1) or 213, 285 (4); and PHY 112 (3), 186 (1) or 214, 286 (4).

A total of 126 credits is required for graduation.

Geosciences

The major in geosciences, offered by the Department of Geosciences, is designed as a foundation for careers in the earth sciences. The federal government identifies GEO 204, 210, 320, 370, 450, and supporting sciences as a minimum background for geologists. Students in this program elect one of the following three options: environmental geology, sedimentary geology, or petrology/tectonics. These options offer preparation for further work in areas such as environmental geology, mineral and energy resources, hydrogeology, sedimentology, coastal geology, igneous and metamorphic petrology, geochemistry, structural geology, and tectonics.

Students interested in teaching earth science should contact the University's Department of Geosciences for details about a cooperative program with the Department of Education.

All B.S. majors are required to complete the following geosciences courses: 103 (4), 204 (4), 210 (4), 320 (4), 370 (4), 450 (4), 483 (4), two courses within one of the options listed below, two additional approved geosciences electives (at the 200-level or above), and either an approved summer field camp (GEO 480 [**capstone**]) for four to six credits or an approved field experience (prior approval required). The field camp is normally taken following the junior year. Students must also take the following supporting course work: MTH 131 (3) or 141 (4); MTH 132 (3) or 142 (4); BIO 101 (4) and 102 (4); CHM 101 (3), 102 (1) and 112 (3), 114 (1); CSC 201 (4) or STA 308 (3); PHY 111 (3), 185 (1) or 213, 285 (4); and PHY 112 (3), 186 (1) or 214, 286 (4).

Students in the Geosciences program select one of the following options:

Environmental Geology Option. Emphasizes the study of geology as it pertains to the environment, including hydrogeology (ground-water resources and water quality) and the recognition and reduction of effects of geologic hazards (coastal erosion, volcanic eruptions, earthquakes). Students must take two of the following: GEO 277 (3), 465

or 485 (3), 468 (4), 482 (4), 484 (4), 515 (3), 568 (3), 577 (3), or 583 (3).

Sedimentary Option. Emphasizes the study and interpretation of depositional environments, both in the present and in the geologic record, including the study of sedimentary processes, paleontology, the reconstruction of paleoenvironments, and stratigraphy. Students must take two of the following: GEO 277 (3), 250 (4), 465 (3), 468 (4), 515 (3), 550 (3), or 555 (3).

Petrology/Tectonics Option. Emphasizes the study of igneous and metamorphic processes through geochemistry, petrography, structural analysis, and geophysics, leading to interpretations of rock petrogenesis and earth history. Students must take two of the following: GEO 465 (3), 530 (4), 531 (3), 580 (3), 581 (3), or CHM 431.

GEO 480, 497 and 499 are **capstone** experiences available for this major.

A total of 126 credits is required for graduation.

Landscape Architecture

Landscape architecture is a curriculum leading to the Bachelor of Landscape Architecture (B.L.A.) degree. Accredited by the American Society of Landscape Architects, the curriculum is designed to prepare undergraduates for professional careers in the public and private sectors of landscape architecture that involve the design, planning, preservation, and restoration of the landscape by applying both art and science to achieve the best use of our land resources.

Landscape architects design and plan parks, recreation areas, new communities and residential developments, urban spaces, open spaces and rooftop landscapes, commercial centers, resort developments, transportation facilities, corporate and institutional centers, industrial parks, and waterfront developments. Their professional skills may also be used to preserve natural, historic, and coastal landscape projects.

The requirements of this curriculum include preparation in the basic arts and sciences. The major includes 57 credits of

program courses; 22–24 credits of supporting requirements; and 13–15 credits of approved supporting electives through which a student may obtain additional preparation in art, natural resources, community planning, business, or plant sciences. Students are required to own a laptop computer by the time they enter the program. Specifications are available from the Landscape Architecture Program Office or online at uri.edu/cels/lar. Graduation requirements include a minimum of 130 credits maintaining a grade point average of at least 2.50 and no landscape architecture grades below a C.

URI's Landscape Architecture Program (LAR) is oversubscribed. Accreditation standards regarding staff and facilities limit the present student acceptance into the major to 20 per year and require a competitive admission policy. Students will be reviewed twice during the course of their studies: first for admission into the lower-division design sequence and again for acceptance into the upper-division B.L.A. major.

Admission into the lower-division design sequence courses (LAR 243 and 244) requires departmental approval. Approximately 50 percent of the openings are filled by students entering as incoming freshmen and/or transfer students through Undergraduate Admission (subject to maintaining a minimum 2.50 grade point average with no grades in LAR courses below a C). These students begin the design sequence in the fall semester of their second year at URI. The remaining openings are filled by matriculated students through an application accompanied by a transcript of grades and, where appropriate, a portfolio. Applications and transcripts are evaluated in February/March each year for acceptance into the lower-division design sequence in the following fall. In order to encourage minority applicants, one available space is set aside each year for a minority applicant who meets the minimal program qualifications.

Acceptance into the upper-division (junior-senior) landscape architecture major is based on submission and review of a portfolio of lower-division work, academic transcript, and a written essay. A maxi-

mum of 20 students per year are accepted into the upper-division B.L.A. curriculum. Eligible applicants for the upper division are students enrolled in LAR 244, repeat applicants, and students wishing to transfer directly into the upper division from other landscape architecture programs. Only students who have completed comparable lower-division courses in programs that have been accredited by the American Society of Landscape Architects will be allowed to compete for these upper-division positions. Such transfer applicants must first be accepted into the University by the Office of Undergraduate Admission and have their portfolio, transcripts, and essays submitted to the director of the landscape architecture program before February 20 preceding the fall semester in which they wish to enroll. Students will be notified of their acceptance into the upper-division program before preregistration for fall classes.

Interested students should discuss entrance probabilities with the program advisor.

Marine Affairs

URI's Department of Marine Affairs offers the following degrees: B.A., B.S., M.A., M.M.A. (Master of Marine Affairs), and Ph.D.

The B.A. and B.S. in marine affairs focus on coastal and ocean areas and examine environments, resources, and uses from a variety of perspectives. Topics include coastal and fisheries management, ports and maritime transportation, ocean policy and ocean law.

A marine affairs major establishes a background for careers in the public or private sectors in a wide variety of marine-related fields. Typical areas of employment include positions in government concerned with coastal zone, environmental, or fishery management, and marine transportation. In the private sectors, students have secured positions in environmental consulting firms, marine insurance, public interest nongovernmental organizations, marinas, ports, and companies involved in shipping. The major serves well as an educational background for continued study in law,

especially environmental, fishery, coastal zone, admiralty, and ocean law. Students have also entered graduate and professional programs in environmental management, public administration, community planning, marine affairs, and related fields.

Students in the Department of Marine Affairs who participate in the New England Regional Student Program must maintain a 2.8 G.P.A. and take at least one MAF course per year to retain their New England regional tuition status. Failure to meet these objectives will result in suspension of the reduced tuition privilege. Reinstatement may occur if the student meets these requirements for one year after the time of the suspension.

Bachelor of Arts in Marine Affairs.

Students who obtain the B.A. in marine affairs must fulfill the Basic Liberal Studies requirements of the College of Arts and Sciences (page 50).

Students selecting this field are required to complete at least 30 credits (maximum 45) in marine affairs as follows.

All of the following courses (12 credits): MAF 100, 120, 220, and 410 [**capstone**]. Five of the following courses (15 credits): MAF 312, 415, 320, 330, 413, 434, 461, 465, 471, 472, 475, 484, and 499. One additional MAF course (three credits) must be taken to complete the required 30 credits in the degree.

In addition, students must also take STA 308 and OCG 123 or 401 (if OCG 123 is taken, it may also be used toward fulfilling the Basic Liberal Studies Natural Sciences requirement).

A total of 120 credits is required for graduation. At least 42 of these credits must be in courses numbered 300 or above.

Bachelor of Science in Marine Affairs.

Students selecting this field must complete at least 30 hours in marine affairs with the following required MAF courses: MAF 100, 120, 220, 410 [**capstone**], 482; and five of the following courses: MAF 312, 320, 330, 413, 415, 434, 461, 465, 471, 472, 475, 484, and 499.

In addition to the above requirements, students must take BIO 101; OCG 123 or 401; MTH 111 or 131; and WRT 333 (3).

Students must also select a total of 18 credits from the following, of which nine must be at the 300 level or above: AFS 102, 201, 210, 211, 321/322, 332, 362, 432, 483; BIO 141, 252, 345, 355, 360, 418, 455/457; CHM 103, 112, 124/126; EEC 105, 110, 205, 310, 345, 356, 410, 432, 435, 440, 441, 456, 460; GEO 100, 103, 210, 240, 277, 370, 450, 483; NRS 223, 361, 406, 410, 423, 424, 440, 461; NRS/GEO 482; OCE 101, 215, 307, 310, 311; PHY 109/110, 111/185, 112/186, 130, 213/285, 214/286, 306; STA 308, 409, 412, 413.

A total of 126 credits is required for graduation.

Marine Biology

See page 96.

Microbiology

This major, offered by the Department of Cell and Molecular Biology, meets the guidelines of the American Society for Microbiology. It will prepare students for work in a wide variety of scientific areas including molecular genetics, biotechnology, and the pharmaceutical industry, as well as many other areas of biological sciences. A strong background in chemistry is emphasized, providing excellent preparation for graduate or professional school. An option in biotechnology is also available.

Students who develop a strong interest in the clinical aspect of microbiology can easily move to URI's Clinical Laboratory Sciences program. This department also offers a Master of Science degree in cell and molecular biology, and a Ph.D. in biological sciences.

A minimum of 30 credits in microbiology is required, including MIC 333; the **capstone** experiences 413, 414, 415, 416, and 495; and one course selected from MIC 412, 422, 432, or 576. Students majoring in microbiology may include any course in microbiology; BIO 327, 341, 432, 437, and 465. Students planning to attend graduate school are advised to take MTH 131 and 132, or 141 and 142. In addition, they must

take BIO 101, 102, and 352; CHM 101, 102, 112, 114, 212, 226, 227, and 228; BCH 311; PHY 213, 214, 285, and 286 or 111, 112, 185, and 186; and MTH 131 or 141 and one of the following: MTH 111, 132, 142; CSC 201; or STA 308.

Note: CHM 229 and 230, which are offered in summer only, may be substituted for CHM 226.

A total of 130 credits is required for graduation.

Biotechnology Option. Students in the microbiology major may elect the biotechnology option, which offers preparation for further work in research and development, biotechnology operations, quality assurance, and regulatory affairs. This option emphasizes a broad and interdisciplinary overview of the biotechnology industry, and provides students with an academic background in microbiology, biochemistry, cell biology, molecular biology, and molecular genetics to prepare them for careers at several levels of industry.

In addition to the courses specified for the major, the following biochemistry and microbiology courses are required: BIO 341, 437; MIC 190, 211, 333, 413, 415, 499 and six additional credits of MIC or BCH course work. MIC 414, 416, and 495 are not required for students pursuing this option.

The required internship for this option (MIC 499) is conducted with the cooperation of local members of the biotechnology industry and may be pursued on a full- or part-time basis. Students should be aware that internships may be limited in number and are awarded on a competitive basis; therefore those interested in the biotechnology option should consult with their advisors early in their college career.

Nutrition and Dietetics

This major prepares undergraduates for careers in nutrition-related fields. Two options, dietetics and nutrition, are available.

The major requires 11 credits in introductory professional courses including NFS 110, 207, 227, 236, and 276; 21–22 credits in sciences (four in general chemistry, four in organic chemistry, seven–eight in

biology, four in microbiology, and three in biochemistry), three credits in statistics, and 25–29 credits in the concentration including the following courses: NFS 394, 395, 410, 441, 443, and 458 [capstone]. WRT 104 or 105, or 106, and COM 101 are required and may be used to fulfill general education requirements. There are 19–24 credits of supporting electives and 12 credits of free electives. A total of 123 credits is required for graduation.

Students will be admitted to the Nutrition and Dietetics major in the College of the Environment and Life Sciences after completing a minimum of 30 credits. Students must complete the following courses prior to admission: 1) NFS 207, 2) either CHM 103/105 and CHM 124/126 or BIO 121 and BIO 242, and 3) either COM 100 or WRT 104/105. A minimum grade of C in NFS 207 and C- in the remaining courses is required for admission. In order to graduate, students will need to have earned a minimum of C in each of the required NFS courses and a minimum of C- in each of the required program courses. The required NFS courses for the Dietetics Option include: NFS 110, 207, 227, 236, 276, 337, 375, 376, 394, 395, 410, 441, 443, 444, and 458; and the required program courses include: CHM 103, 105, 124, and 126; BCH 311; BIO 121; BIO 242; MIC 201; WRT 104/105; COM 100; STA 220; SOC 100; and PSY 113. The required NFS courses for the Nutrition Option include: NFS 110, 207, 227, 236, 276, 394, 395, 410, 441, 443, 458, and two additional NFS concentration courses; the required program courses include: CHM 103, 105, 124, and 126; BCH 311; BIO 102 or 121; BIO 242; MIC 201; WRT 104/105; COM 100; and STA 220.

Dietetics Option. This option is required of all students planning to become registered dietitians. URI's dietetics program is accredited by the Commission on Accreditation for Dietetics Education of the American Dietetic Association (ADA), 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606, 312-899-0040, ext. 5400. This option provides students with the academic background in clinical, community, and administrative

dietetics. In addition to the core courses specified for the major, the following courses are required: NFS 337, 375, 376, 444 and BUS 341. SOC 100 and PSY 113 are also required and may be used to fulfill general education requirements. Students are encouraged to use supporting elective and free elective courses to study disciplines related to the field.

After completing their B.S. requirements, students can qualify for the professional title of Registered Dietitian by completing supervised practice requirements and passing a national exam. The supervised practice requirement is met by completing an ADA-accredited dietetic internship program available to students on a competitive basis nationwide. Internships may be combined with graduate programs in universities leading to an advanced degree. Students completing academic and supervised practice requirements become eligible to take the national registration examination.

Nutrition Option. This option is for students who want to study nutrition but do not plan to become registered dietitians. Using this option, students have the opportunity to design their own programs by combining training in nutrition with other areas that interest them. In addition to the courses specified for the major, students must complete a minimum of 3 credits in NFS 491/2 or NFS 451, and 9 credits selected from advanced-level NFS courses. Students must also select a "minor" field of study. To satisfy this requirement, students can complete any one of the University-approved minors, or complete 18 credits in a curriculum other than NFS. Examples of possible minors are health promotion, exercise science, psychology, international development, journalism, biology, and general business. Alternatively, with approval from the department, students may complete 18 credits related to their interests or career goals selected from several disciplines. Students may, for example, select courses to prepare for graduate school or meet basic admission requirements for medical school.

Resource Economics and Commerce

This major, offered by the Department of Environmental and Natural Resource Economics (with courses listed under Environmental Economics), provides students with a broad education focused on resource economics, economics, and natural resources sciences. In the private sector, careers can focus on the production, marketing, and distribution of natural resource commodities such as fisheries and agricultural products, timber, and petroleum, or on recreation and tourism. The major can also prepare the student for working with the conservation and management of natural resources at the state and national levels, for advanced professional programs in environmental law or community planning, or for graduate study in resource and agricultural economics.

EEC 105 and NRS 100 are prerequisites for this major, which requires a total of 125 credits. Ten credits in basic sciences are required, including four in general chemistry and six in general biology. Fifteen credits are required in supporting sciences including three in computer science and six in mathematics, physics, genetics, plant physiology, population biology, introductory ecology, microbiology, general and organic chemistry, or physical geology. The remaining six credits in supporting sciences can be selected from courses in applied biology, oceanography, mathematics, chemistry, computer science, or statistics. Introductory calculus is strongly suggested. Twenty-four credits in concentration courses are required at the 300 level or above, including 15 credits in resource economics and three credits in microeconomic theory.

Twenty-six credits are required in supporting electives, which must include three credits in communication skills. The student normally selects three credits in communication in addition to the general education requirements. The remaining credits in concentration courses and supporting electives should be selected in consultation with a faculty advisor.

Students have considerable flexibility in choosing courses in the College of the Environment and Life Sciences and other colleges at the University. All students are required to take sufficient course work in the physical and biological sciences to gain familiarity with the resource area in which they are interested.

Students interested in water resources, for example, would select appropriate courses from natural resources science and chemistry. Students interested in fisheries marketing and trade should select course work in business, fisheries science and technology, and nutrition and food sciences. Students intending to pursue graduate studies in resource economics or economics should select course work in economic theory, mathematics, and statistics.

Wildlife and Conservation Biology

The major in wildlife and conservation biology, offered through the Department of Natural Resources Science, prepares students for professional careers in the public and private sectors of wildlife biology. In addition, the major provides a solid background for graduate study. Wildlife biologists are professionals concerned with the scientific management of the earth's wildlife species and their habitats. They work in the areas of preservation, conservation, and management of wildlife species. Graduates can become Certified Wildlife Biologists (CWBs) who are recognized by the Wildlife Society, an international professional organization. In addition, wildlife majors meet the educational requirements for state and federal employment in the wildlife profession.

The major requires 13 credits of professional courses, which include natural resource conservation, seminar in natural resources, resource economics, introductory soil science, and conservation of populations and ecosystems. As part of the basic science requirements, wildlife majors must complete six to eight credits in introductory biological sciences; three credits in introductory ecology; four credits in introductory

physics; four credits in physical geology; four credits in introductory chemistry; four credits in organic chemistry; three credits in introductory calculus; and three credits in introductory statistics. Required concentration courses (22–23 credits) include three credits in the principles of wildlife management; three credits in wildlife field techniques; four credits in field botany and taxonomy; three credits in wetland wildlife or nongame and endangered species management; and nine to ten credits from an approved list of concentration courses that may include, for example, field ornithology, biology of mammals, vertebrate biology, animal behavior, introduction to forest science, wetland wildlife management, wetland ecology, and wildlife biometrics. Supporting electives (31–34 credits) must be selected from the approved list. We encourage students to complete course work so they can become certified wildlife biologists. The list includes the following upper-division course work: three credits in botany; six credits in zoology; six credits in resources policy or administration, environmental law, or land use planning; and six credits in communications. An additional 10–11 credits of supporting electives must be selected from concentration electives, or from other 300- or 400-level natural resources science courses. Up to 24 credits of experiential learning courses may be taken toward satisfying concentration (letter grade courses only) and supporting elective requirements.

NRS 402 and 403, or 423 and 425, or 522 and 524 are the **capstone** experiences in this major.

MINORS IN NATURAL RESOURCES SCIENCE

The following minors are University-approved. Students may also design their own minors; see page 35.

GIS and Remote Sensing. This minor field of specialization provides students in-depth training in the use of GIS (geographic information system) and remote sensing technology and application of geospatial data processing methods to environmental

problem solving. Students who declare a minor in GIS and remote sensing must complete 18 credit hours consisting of the following core courses: NRS 409, 410, 415, 516, and 522. The remaining credits may be taken from NRS 423, 524, 533, or CPL 511. Students minoring in GIS and remote sensing are encouraged to take a capstone course that allows them to apply their analytical skills in a real-world application.

Soil Environmental Science. This minor field of specialization provides students in-depth training in the application of soils information to solve environmental problems and issues. Students fulfilling the requirements of the soil environmental science minor meet the qualifications for basic membership in the Society of Soil Scientists of Southern New England, are eligible for certification as soil scientists under the American Registry of Certified Professional Soil Scientists, and meet the requirements for federal job listings under soil scientists. Students who declare a minor in soil environmental science must complete 18 credits from the following courses: NRS 212, 312, 351, 361, 412, 426, 450, 452, 471, 510, 567, or GEO 515. Students minoring in soil environmental science are encouraged to take a capstone course that allows them to apply their analytical skills in a real-world application.

Wildlife and Conservation Biology. This minor field of specialization provides students in-depth training in the principles of managing wildlife populations and their habitats. Students who declare a minor in wildlife and conservation biology must complete at least 18 credits of NRS courses within the WCB major curriculum, at least 12 of these 18 credits must be at the 200 level or higher, and all courses in the minor must be taken for a letter grade. Students minoring in wildlife and conservation biology are encouraged to take a capstone course that allows them to apply their analytical skills in a real-world application.

A major in this program is also available. See above.

COLLEGE OF HUMAN SCIENCE AND SERVICES

William Lynn McKinney, *Dean*
Nancy Kelley, *Assistant Dean*

The College of Human Science and Services is a people-oriented college designed to focus on the human and material resources needed to help individuals and groups solve human problems encountered in contemporary society. Our programs prepare students for a variety of professions in teacher education, health-related fields, and fields that have evolved from URI's historic land-grant mission in home economics. These programs include both formal and informal experiences with people in a wide variety of public service settings that enable students to develop the competencies needed in the field of human services. The teacher education programs offered through the college are outlined in the following departmental descriptions. For more information on teacher education programs, see page 41.

Degrees offered include a Bachelor of Science degree with majors in communicative disorders; human development and family studies; kinesiology; secondary education; textile marketing; and textiles, fashion merchandising, and design; and Bachelor of Arts degrees in elementary or secondary education.

The college sponsors a number of organizations and activities that provide special opportunities for students, including two child development centers, a family therapy clinic, historic textile and costume collection, computer laboratory, physical therapy clinic, and a speech and hearing clinic.

Minors. Students can declare a minor, which will appear on their transcripts as a category separate from their major. See page 35 for details.

The college participates in the following interdisciplinary minors: gerontology, hunger studies, leadership studies, and special populations (see pages 36–39). Details on

minors offered within the college can be found later in this section.

Faculty

Communicative Disorders: Professor J. Singer, *chairperson*. Professors Kovarsky and Weiss; Associate Professor M. Kim; Assistant Professor Mahler; Clinical Assistant Professors Connors and Theadore; Adjunct Assistant Professor R. Singer.

School of Education: Professor Byrd, *director*. Professors Boulmetis, Eichinger, Favazza, McKinney, Purnell, Trostle Brand, G. Willis, and Young; Associate Professors Adamy, deGroot, Hicks, Peno, Seitsinger, and Shim; Assistant Professors Coiro, Deeney, and Kern; Research Associate Professor Brand; Instructor Fogleman; Professor Emeritus Heifetz.

Human Development and Family Studies: Professor J. Adams, *chairperson*. Professors J. Adams, Gray Anderson, Clark, Knott, Newman, and Xiao; Associate Professors Branch, Kalymun, McCurdy, Richmond, and Sparks; Assistant Professors S. Adams, Dice, Harper, Kisler, and Vaccaro; Adjunct Professors P. Newman and Prochaska; Adjunct Instructors Blumen, Kerbel, Penhallow, and Warford; Professors Emeriti Cohen, Maynard, and Schaffran.

Kinesiology: Professor Riebe, *chairperson*. Professors Lamont and Manfredi; Associate Professors Blissmer, Ciccomascolo, and Kusz; Assistant Professors Delmonico and Xu; Lecturers Doll, Hatfield, and Steen.

Textiles, Fashion Merchandising, and Design: Professor Welters, *chairperson*. Professors Bide and Ordenez; Associate Professors Harps-Logan and Hannel; Assistant Professors Kapstein and Kim; Adjunct Professor Emery.

Interdisciplinary Programs: Gerontology—Professor Clark, *director*; Human Science and Services—Dean McKinney, *program head*; Leadership Studies—Associate Professor Richmond, *acting program head*; Special Populations—Associate Professor Roush, *acting program head*.

Curriculum Requirements

General Education Requirements. All students pursuing a bachelor's degree in the college are required to develop a 39-credit program in general education within the framework listed on pages 33–35.

Students within the college must take, as part of their *English communication* requirement, a minimum of three credits from WRT 104, 105, or 106 and a minimum of three credits from COM 100; or as part of their *social sciences* requirement, a minimum of three credits from APG, PSY, and SOC courses approved for general education. Individual programs within the college may require specific courses.

Students in the elementary and secondary education program must follow the basic liberal studies requirements of the College of Arts and Sciences.

Field Work. Many of the college's academic programs require a supervised field work experience as part of the degree requirements. This experience is designed to provide students with the opportunity to apply classroom knowledge in a career-related setting. Placements are made in a wide variety of agencies such as public schools, health care facilities, child care centers, and other human service settings. Satisfactory completion of a required field experience depends on achievement of basic competencies established by the academic department in cooperation with the agency. The University supervisor is responsible for determining whether or not the student has attained the required competencies and, in some cases, may extend the time required for the experience until the student's performance is satisfactory. If in the opinion of the University supervisor the performance of the student is unsatisfactory, and particularly if client/patient safety is at risk, the student may be removed from the field experience prior to the end of the semester or term.

Course Load. Approval of the advisor and the dean is needed for a schedule of more than 19 credits per semester.

Repeating Courses for Credit. Unless otherwise stated in the course description, a course cannot be repeated for credit. Credit can be counted only once toward the total credits required for graduation. Repeating courses in which a grade of C or better was earned requires approval of the student's academic dean; students may need to take such courses on a pass-fail basis.

Curricular Modifications. In consultation with the advisor, and with the approval of the department chairperson, a student will be permitted to modify the normal requirements of the department in which the student is majoring. The decision of the department chair is final. Requirements outside the major may be modified only with the approval of the Scholastic Standing Committee of the College of Human Science and Services. Petition forms are available in the Office of the Dean. Minimum grade point average and total credit requirements are not petitionable.

Transfer Students. Transfer students should be advised that admission to some programs in the college requires meeting certain prerequisites or separate admission criteria. Teacher education programs in the School of Education, Department of Human Development and Family Studies, and the Department of Kinesiology have specific admission criteria and generally require that a matriculated student complete at least one semester of work at URI before applying for admission. Transfer students may be admitted to the University, but are not admitted directly into these programs.

The Plan for Early Contingent Admission to the D.P.T. Program in Physical Therapy requires careful and timely course planning typically beginning with the freshman year at URI. It is unlikely that transfer students would have the appropriate sequence of courses, including the prerequisites, that would allow them to take advantage of this option.

Students interested in any of the above programs should refer to the specific program descriptions on the following pages and consult the department for additional information.

Graduation. It is the responsibility of each student to file an Intent to Graduate form and curriculum work sheet approved by his or her advisor in the Dean's Office. The deadline is September 15 for May graduation, April 5 for August graduation, and May 5 for December graduation.

Communicative Disorders

This curriculum leads to a Bachelor of Science (B.S.) degree. Students seeking admission to this program must receive a grade of C or better in CMD 160, 272, and 273 and maintain a minimum cumulative GPA of 2.50. In addition to general education requirements and appropriate free electives, a major of 43 credits in communicative disorders includes 34 credits of required courses and nine credits of professional electives.

The required courses are CMD 160, 272, 273, 274, 276, 278, 361, 375, 377, 454, 460, 465, and 493. The remaining nine credits (three courses) must be selected from the following courses: BMS 312; COM 221, 251; CMD 440, 475, 491, 492; EDC 312; HDF 200, 201, 203, 312, 314, 400; HIS 117; HSS 120; LIB 120; LIN 200, 220; PSY 232, 254, 300, 388, 442; SOC 224; STA 220, 308.

With careful early planning, students can use free electives to achieve a double major or explore special-interest areas in depth. Students should anticipate the necessity for graduate study in speech-language pathology. The typical minimum entry requirement for graduate study is a grade point average of 3.00.

A total of 120 credits is required for graduation.

Accelerated Bachelor's-Master's Degree Program in Speech-Language Pathology. URI sixth-semester students pursuing a B.S. degree in communicative disorders with 25 credits of electives remaining may apply for acceptance into an accelerated master's degree program in speech-language pathology. This accelerated program is not available to non-URI undergraduates or part-time graduate students. Students ac-

cepted to these programs follow a specified sequence of graduate-level course work and clinical practicum during their senior year, and complete the master's degree with an additional one year and one summer of full-time study in speech-language pathology. A cumulative grade point average of 3.00 overall and 3.20 in the major is required, with satisfactory MAT or GRE scores. Three letters of recommendation (two from URI communicative disorders faculty) are also needed. Students should indicate their intent to apply to the accelerated program in the graduate application materials.

Students in the speech-language pathology program are required to take a minimum of 24 credits in specified course work and practicum at the 400–500 level in the fifth year. Requirements for the M.S. in speech-language pathology are outlined in "Graduate Programs" (see pages 161–162 for more information).

Education

Curriculums in secondary education lead to the Bachelor of Science or Bachelor of Arts degrees, the curriculum in elementary education to the Bachelor of Arts (B.A.) degree. Students wishing to enroll in the early childhood education program must major in human development and family studies and seek admission to the teacher education component of this program, as outlined below. The Master of Arts (M.A.) degree programs in education are described in "Graduate Programs."

The curriculums offer a balanced program of academic preparation and professional training. The required professional courses contribute directly to the student's understanding the teacher's role in society and developing teaching skills.

Successful completion of the early childhood education program leads to an initial teaching certificate for the pre-school and primary grades (PK–2), while completion of the elementary education program leads to an initial teaching certificate for grades 1–6. The secondary education program leads to an initial teaching certificate for a specific subject area in grades 7–12.

If you are a transfer student, see above for information on transferring into these programs.

Admission Requirements. Students interested in undergraduate teacher education programs must apply for admission to the Office of Teacher Education. Students interested in URI's early childhood, elementary, and secondary education programs must submit a portfolio and sit for an interview as part of the admission process. Please visit uri.edu/hss/education for additional information.

Applications for admission to teacher education programs are normally submitted during the sophomore year. Applications will be reviewed by a departmental screening committee based on the following criteria: 1) recommendations from faculty and others who have knowledge of the candidate's experience or interest in working in education; 2) a writing sample expressing career goals, experience in working with children, and expectations as a teacher; 3) passing scores on the PPST: Reading 172, Writing 171, Math 171 or a score of 1100 on the SAT; 4) the student's academic record, including a cumulative grade point average of 2.50 or better. In addition, for the secondary education and music education programs, a grade point average of 2.50 or better in the Arts and Sciences major or specialization. Students applying to the early childhood education program must attain a C or better in HDF 203 or equivalent for acceptance into the program.

Students should consult with the elementary or HDF advisor at University College, the Office of Teacher Education, or the HSS advisor at the Providence Campus.

Due to limited staff and facilities, admission to the programs in early childhood and elementary education is limited. Some applicants meeting the minimum requirements may not be admitted due to limited space. Students should check with the School of Education, the Department of Human Development and Family Studies, or their University College advisor as early as possible for additional information.

Students denied admission can petition the department for a review of the decision. In such cases, the school's screening committee meets to consider the appeal.

Applicants who fail to gain admission should seek counsel from an appropriate advisor. Students can reapply for admission but should understand that this may delay their anticipated graduation date.

Program Requirements. For courses required for early childhood education, see "Human Development and Family Studies" on the next page. For more information on teacher education programs, see page 41. For graduate teacher education programs, see the "Graduate Programs" section.

Students who are admitted to the elementary education program are required to complete a B.A. degree. Students must select a major in the College of Arts and Sciences, or biology in the College of the Environment and Life Sciences, in addition to the major in elementary education. Students must also fulfill the basic liberal studies requirements of the College of Arts and Sciences as they relate to double majors. See program requirements in the College of Arts and Sciences section.

The professional sequence courses required for elementary education are EDC 250, 312, 102 or 360, 402, 423 (or HDF 302) 424, 452, 453, 454, 455, 456, 457, 458, 459 and EDC 460. These courses are taken prior to student teaching. EDC 484 and 485 make up the student teaching experience. The following are also required and can be taken as part of the basic liberal studies requirements: COM 101; HIS 142; PSY 113, 232; WRT 104, 105, or 106; and a one-credit health education course or equivalent. Students should contact the School of Education for more details.

Students seeking to teach in a middle school must obtain a middle level endorsement and be eligible for elementary or secondary certification. The professional sequence of courses required for middle level endorsement is EDC 400, EDC 415 or an approved adolescent development course, and a practicum. These courses should be taken prior to student teaching. EDC 484

and 485 make up the student teaching semester. Teacher candidates seeking a middle level endorsement are required to teach in a middle school in addition to their elementary or secondary experience. In addition, 21–30 credits in one of the following content areas is required: English/language arts, mathematics, science, social studies, or foreign language. Final projects for each course must be uploaded into the electronic portfolio along with a self-reflection prior to the end of each course. Admission to the middle level endorsement program is contingent upon acceptance to the elementary or secondary education program. Prior to student teaching, candidates must successfully meet the standards for EDC 400 and the pre-student-teaching review, which includes review of all required courses and e-portfolio tasks by the secondary and elementary teams in conjunction with the middle level team and the Office of Teacher Education. Elementary education students should see a middle level advisor for specific course requirements.

The professional sequence courses required for secondary education are EDC 250, 312, 102 or 360, 371, 402, 430, 431, and 448. These courses are taken prior to student teaching. EDC 484 and 485 make up the student teaching semester. PSY 113 and HDF 310 or EDC 415 are also required. Students in secondary education are required to take a content area exam in their area of certification.

Students pursuing a program in secondary education normally obtain a B.A. degree, double majoring in education and their subject matter specialization, although a B.S. degree in secondary education is available in some specialization areas. Secondary education programs are offered in biology, chemistry, English, general science, history, mathematics, modern language, physics, and social studies.

Students in all programs must maintain minimum grade point averages of 2.50 overall, 2.50 in their education major, and 2.50 in their academic major area. To be eligible for student teaching, students must earn a grade of at least a C in EDC 430 and 448 (secondary); EDC 424, 425, 452, 453,

455, 456, 457, 458, and 460 (elementary); HDF 203, 301, 303, EDC 424, 426, and 429 (early childhood). Failure to maintain these grades and/or averages will result in “program probation,” a one-semester period during which students have the opportunity to earn acceptable grades but may not student teach. Failure to return grade averages to acceptable standing after one semester leads to dismissal from the program.

Students in the School of Education, graduate and undergraduate certification and licensure programs will be required to take and pass a content area exam(s) in their area of certification and any other exam required for state licensure prior to student teaching or final internship. Contact the Office of Teacher Education for the “passing” scores required for each discipline.

The major in elementary education requires 128 credits; secondary education requires 120 credits.

The School of Education has designated EDC 485 as its **capstone** course.

Human Development and Family Studies

The curriculum in human development and family studies leads to a Bachelor of Science degree. The department also offers a certification program in family financial counseling and planning, as well as the Master of Science degree (see “Graduate Programs”).

The undergraduate B.S. curriculum provides a general background for work with children, families, and adults. Most professions in human development and family studies require academic work beyond the bachelor’s degree for continuing professional work and advancement. Individuals with a baccalaureate degree are employed, however, as professionals in nursery schools, child care centers, institutions and hospitals, and in recreational, child guidance, casework, and other community agencies. Students completing the program in family financial counseling and planning are employed in agencies providing family financial and credit counseling services.

Program student learning objectives:

Graduates of the program in human development and family studies will acquire and utilize knowledge and skills necessary for a professional position or graduate/professional training in the human development and family studies field; understand and use methods of inquiry appropriate to this field, including relevant quantitative or qualitative analytic tools; use acquired knowledge, skills, and creativity to identify and solve complex human science problems; communicate clearly and effectively using a variety of methods; demonstrate a sense of responsibility to self, community, and society; and acquire knowledge and practice regarding the ethical principles and best practices in human development and family studies discipline. A more detailed description of the student learning objectives can be found at the HDF program Web site: uri.edu/hss/hdf.

Admission Requirements. Students seeking admission to this bachelor’s degree program must complete the following courses with an overall grade point average of 2.00 or better prior to acceptance for admission: HDF 200 or 201, PSY 113, any 100- or 200-level sociology course, and three general education credits in mathematics.

Program Requirements. Students are required to complete the following core curriculum:

- 1) a one-credit personal and career development course, HDF 180;
- 2) 15 credits of core courses including HDF 200, 201, 202, 205, and 230;
- 3) any two development courses—courses include HDF 203, 306, 310 and 311, 312, 314;
- 4) six to 12 credits of senior-level field experience chosen from the following options—HDF 480/481; HDF 477/478; EDC 484/485 (early childhood education students only); HDF 497; or the OIEE Internship Program (see page 44).

Additionally, students are required to complete a 12-credit concentration in one of the following three areas:

Professional Content for Child Settings: any 12 credits—HDF 357, 400, 430, 432, 434, 455 and 456, HDF 302 or EDC 425, HDF 305.

Professional Content for Family and Community Settings: any 12 credits—HDF 357, 418, 421, 428, 430, 431, 432, 433, 434, 437, 440.

Professional Content for Family Finance: any 12 credits—HDF 418, 424, 426, 428, 451.

To enhance their concentrations, students must also complete 12 credits of professional electives including HDF 450. Professional electives must be approved in consultation with an advisor, and nine of the 12 credits must be at the 300 level or above. Field experience does not meet this requirement.

Students must have from 19 to 31 credits of free electives to reach the 120-credit B.S. degree requirements.

For information on transferring into this program, see page 106.

Minor in Family Financial Counseling and Planning

Students outside the Department of Human Development and Family Studies may declare a minor in family financial counseling and planning by completing 18 credits as follows: HDF 418, 424, 426, 450, 451, and one of the following courses: HDF 205, 210, 225, or 428.

Certification Program in Family Financial Counseling and Planning

Students will take HDF 418, 424, 426, 428, 450, and 451; and HDF 477, 478 for their senior fieldwork experience. Non-HDF majors should also take HDF 205.

Early Childhood Education. A portion of the courses in the HDF curriculum, plus certain others in education, meet the requirements for the initial Early Childhood Education Certificate (nursery through grade 2) in Rhode Island. Students who wish to meet the requirements for this certificate in Rhode Island must apply to Early Childhood Education through the Office of Teacher Education. See page 41 for admission requirements, certification in

other states, and other information regarding teacher education.

Students complete an application and develop an admission portfolio during the sophomore year. The portfolio includes materials in the following areas: interpersonal and communication skills, academics, experience with children in community settings, and diversity experiences. Students must sit for an interview and take several examinations. Because there are only nine credits of free electives in the program, early consultation with an HDF advisor is important if students are to finish their degree in a timely manner.

URI's curriculum, shown below, meets the mandates for beginning teachers set by Rhode Island's Department of Education. Curriculum requirements for the Early Childhood Education (ECE) Certificate are as follows (in this order):

Prior to acceptance into early childhood education: 1) 39 credits of general education courses (to be taken prior to formal application, including EDC 102, 250, and 312, and NFS 207); after acceptance into ECE program: 2) 16 credits of core courses including HDF 180, 200, 201, 202, 205, and 230; 3) professional content courses totaling 13 credits; these are specific courses that are already required plus one 400-level course (HDF 203, HDF 302 or EDC 425, HDF 357, HDF 400 or 432); 4) certificate program (total 27 credits)—EDC 102, 250, 312, 402, 426 and 350, 429, 424; HDF 301, 303; and 5) final 15-credit senior-level field experience, EDC 484/485 Student Teaching and Seminar.

To be eligible for student teaching, students must maintain a grade point average of 2.50 overall and 2.50 in the major, and attain a grade of at least C in HDF 203, 301, 303, EDC 402, 424, 426, and 429. Failure to maintain these averages will result in "program probation," a one-semester period during which students have the opportunity to earn acceptable grades but may not continue on the early childhood course sequence or student teach. Failure to return grade averages to acceptable standing after one semester will lead to dismissal from the program.

URI's early childhood education program totals 111 credits plus nine credits of free electives; 120 credits are required for graduation.

Kinesiology

This curriculum in kinesiology leads to a Bachelor of Science degree. The major is designed for students who plan to pursue careers in the broad fields of exercise science, health fitness, and physical and health teacher education. Students can prepare for certification as a public school teacher (physical and health education K–12) including endorsement in adapted physical education. For those interested in alternative careers in kinesiology, options are offered in exercise science, health fitness, and general studies in kinesiology. The department also offers a Master of Science degree and a teacher certification preparation program (see "Graduate Programs").

The Department of Kinesiology offers up-to-date research and teaching facilities, including laboratories for biochemistry, electron microscopy, bone density, health fitness, body composition, plethysmography, and human performance.

Students seeking admission to this program must have completed 24 credits including BIO 101 and BIO 121. In addition, students entering the program must have a minimum GPA of 2.00 and must have received a grade of C (2.00) or better in BIO 121.

Kinesiology Options. Students are strongly advised to seek guidance from their advisor in planning their course of study and choosing a focus area.

Exercise Science Option. The exercise science option prepares students to analyze physical activity, exercise, and sport in a physiological context, with an emphasis on basic science courses. This option is for students considering careers or graduate degrees in health care professions: exercise physiology, cardiac rehabilitation, physical therapy, physician's assistant, and occupational therapy. Students in this option are required to have a cumulative

grade point average from KIN core and specialization requirements of 2.50 or higher before completing supervised field work.

Health Fitness Option. This option promotes the understanding of the benefits of physical activity and is designed for students interested in becoming health fitness practitioners. Career opportunities exist in corporate, community, commercial, and hospital-based fitness and wellness centers. Students will be prepared to become certified health/fitness specialists, strength and conditioning specialists, or personal trainers. This option also prepares students for continuing study in exercise science, fitness management, health promotion, preventive medicine, and related fields. Students in this option are required to have a cumulative grade point average from KIN core and specialization requirements of 2.50 or higher before completing supervised field work.

Physical Education and Health Education Teacher Education Option. This option is designed for students seeking teacher certification in physical education and health education at the elementary and secondary levels. Completion of the NCATE approved certification program fulfills the requirement for teacher certification in Rhode Island and the majority of other states. Students interested in undergraduate teacher education programs must apply for admission to URI's Office of Teacher Education. Applications for admission to teacher education programs are normally submitted during the sophomore year. A departmental screening committee reviews the applications. The committee's decision is based on the following criteria: 1) recommendations from faculty and others who have knowledge of the candidate's experience or interest in working in education; 2) a writing sample expressing career goals, experience working with children, and expectations as a teacher; 3) passing scores on the PPST (Reading 172, Writing 171, Math 171) or a score of 1100 on the SAT; 4) interview with presentation of admission portfolio; 5) completion of at least 30 credits of coursework including

KIN 270; and 6) an overall GPA of 2.50 or better and grades of C or better in KIN 270, COM 100, and WRT 104, 105, or 106. If denied admission, students can petition the department for a decision review. Applicants who fail to gain admission should seek counsel from an appropriate advisor. Students may reapply for admission to the teacher education program but should understand that this may delay their anticipated graduation date. Students in the physical and health education teacher education program are required to have a cumulative grade point average of 2.70 or higher in KIN courses before student teaching (EDC 486/7). Students in the physical and health education teacher education certification and licensure program are required to take and pass the Praxis II: Principles of Learning and Teaching (PLT) Test and the Physical Education Content Knowledge Test prior to student teaching. Contact the Office of Teacher Education for the “passing” scores required for each test.

Early Contingent Admission to URI Physical Therapy Program Option. This advanced specialization is designed for highly qualified students who have decided on a career in physical therapy and wish to attend the URI D.P.T. program. Students successfully following this track will be allowed to apply for the URI D.P.T. program during their junior year. Following acceptance, credits earned the first year in the physical therapy program will be used to complete the B.S. degree in kinesiology. Students in this track must complete the following requirements to stay in this accelerated program: 1) complete the required course sequence and have a 3.20 or higher GPA at the completion of freshman year; 2) receive a minimum grade of 3.00 in BIO 121; 3) complete the required course sequence and have a 3.30 or higher GPA at the completion of sophomore year; and 4) complete the required course sequence and have a GPA of 3.40 or higher following the first semester of the junior year. Students applying for early contingent admission must also complete all admission requirements set by

the D.P.T. program (see “Physical Therapy” in the “Graduate Programs” section of this catalog). Completion of this specialization does not guarantee admission into URI’s D.P.T. program.

General. This option is designed for the student who desires a broad experience in kinesiology. It may also be used for students transferring into the department.

Degree Requirements. The following courses are required of all students in kinesiology: URI 101 (1 credit), 40 credits of general education including WRT 104, 105, or 106; COM 100; BIO 101; and PSY 113. Core curriculum requirements (16 credits) include BIO 121, 242; KIN 334, 278, and 370. A total of 120 credits is required for graduation from exercise science, health fitness, early contingent physical therapy, and general options. A total of 135 credits is required for graduation from the physical and health education teacher education option. Specific requirements for the different degree options are listed below.

Teacher certification requirements include: KIN 270, 304, 305, 307, 309, 310, 314, 315, 324, 368, 380, 382, 401, 410; PSY 232, 460; EDC 312, 485, 486/487; NFS 207; NUR 150; MIC 201; HDF 357; 7 credits of practicum activity including KIN 116, 117, 118, 121, 222, 322, and 324, 6 credits of approved adaptive physical education courses. There are no free electives.

Requirements in the *health fitness* option include KIN 105L, 120, 275, 325, 335, 369, 382, 420, 425, 484, 486; NFS 207, and a health promotion course. Additionally, to reach the required 120 credits, students take nine credits of free electives and select 12 credits from the following specialized electives: BCH 211; BSL 333; BUS 140, 201, 202, 340, 441; CHM 124; COM 202, 221, 324, 351; HDF 201, 314, 357, 450; NFS 360, 441, 444; KIN 243, 391, 441, 475, 478; PHY 111, 112, 185, 186; PSY 103; SOC 224; WRT 227, 235.

The *exercise science* option requires CHM 105, 124, 126; BCH 211; BIO 244; NFS 207; KIN 275, 325, 335, 369, 420, 484, and 486. Additionally there are 15–17 credits selected from specialized electives

and 6–8 credits of free electives. Students may need to use free electives to complete requirements for many graduate programs. Specialization electives that students may choose from are BIO 445, 451, 453; BCH 464; NFS 360, 441, 444; MIC 211; KIN 120, 243, 391, 414, 475, 478; PHY 111, 112, 185, 186; PSY 232, 300; SOC 100, 224; STA 307, 308, 409, 412. In addition, students applying for URI’s physical therapy program must take the following classes as specialization or free electives: PHY 111, 185, 112, 186; MTH 111; a basic statistics course (through ANOVA) and a second level psychology course (developmental or abnormal psychology preferred).

The *early contingent physical therapy program* requires that the following classes be completed during the first five semesters of study: BIO 101, 121, 242, 244; CHM 103, 105, 124, 126; COM 100; KIN 243, 275, 278, 325, 334, 335, 370; MTH 111; PHY 111, 112, 185, 186; PSY 113, 232, 300; WRT 104; and 12 credits of general education courses. Other requirements include KIN 420; FSN 207; nine credits of general education courses. During the fifth and sixth semesters, the first year physical therapy graduate curriculum is followed.

Requirements specific to the *general* option include KIN 243, 270, 275, 369, 382, 475 or 478; PSY 255; NSF 207; and HDF 357. Additionally, students must complete 18 credits in a department-approved focus area, or complete a University-approved minor. Students also complete courses to fulfill the general education requirements, and the kinesiology core courses that are common to all options in the department.

Textile Marketing

This interdepartmental curriculum leads to a Bachelor of Science degree. It combines the professional requirements of a major in textiles with the requirements of the College of Business Administration and is designed to prepare students for wholesale and retail marketing positions in the textile industry.

Textile marketing managers are responsible for planning and directing the flow of textile products from manufacturers to consumers. The major, which provides a strong background in both textiles and marketing, is designed to give students the opportunity to explore the areas of manufacturing, market research, consumer behavior, advertising, promotion, fashion, and sales.

Freshmen who complete a minimum of 27 credits with an overall grade point average of 3.00 or higher and who complete CSC 101 and MTH 131 (or their equivalents BUS 110 and 111) with a B or higher will be admitted to the College of Human Science and Services at the end of the freshman year. Student who have a minimum of 42 credits, a grade point average of 2.40 or higher, and who have successfully (with an average of 2.40 or higher) completed CSC 101, MTH 131, STA 308 (or their equivalents BUS 110, 111, 210), BUS 201, and ECN 201 after the first semester of the sophomore year will be admitted to the College of Human Science and Services. Students not meeting these requirements may be eligible to transfer to the textiles, fashion merchandising, and design program.

Students in this curriculum must take the following courses: TMD 103, 224, 303¹, 313, 402, 403, 433²; one of the following: TMD 240, 440, or 441; six credits of TMD electives; BUS 201, 202, 315, 341, 365, 366, 367; CSC 101; or nine credits from BUS 360, 448, 449, 450, 465, 467 or 468; MTH 131; and STA 308, 412. Students must also take the following courses to complete general education requirements: CHM 101/102 or 103/105; one of the following: BIO 105, MIC 190, NFS 207, PHY 109/110, PHY 111/185, or PHY 112/186; and ECN 201, 202.

A total of 120 credits is required for graduation.

Textiles, Fashion Merchandising, and Design

This curriculum leads to a Bachelor of Science degree. The Master of Science (M.S.) program is described in the "Graduate Programs" section.

The major is open to men and women with ability and professional interest in the artistic and technical aspects of the subject. Specialized programs of study prepare students for careers in the design, development, manufacture, and merchandising of textiles, apparel, and interior furnishings. Qualified students can prepare for graduate studies.

The following core courses are required: TMD 103, 224, 232, 303¹, 313, 402, 433²; one of the following: TMD 240, 440, or 441; one of the following pairs: 1) TMD 226, and 326 or 426; 2) TMD 327, and 222 or 325; ART 101, 207; ARH 120, 251, or 252; CHM 101/102 or 103/105; ECN 201 and 202; one of the following: BIO 105, MIC 190, NFS 207, PHY 109/110, PHY 111/185, or PHY 112/186. Twelve credits of TMD electives (six credits must be upper-level courses and no more than three credits from TMD 361, 362, or 461, 462) and 18 credits of professional electives (nine credits from any one area) are required. Students should choose TMD electives and professional electives in consultation with an academic advisor. Students must complete 24 credits with an overall 2.00 GPA and complete CHM 101 or 103, and TMD 103 and the general education mathematics requirement with a 2.00 average to transfer to the College of Human Science and Services. (The same requirements apply to students wishing to transfer into TMD from other majors.) TMD 402 is the **capstone** experience in this major. To complement classroom and laboratory/studio instruction, internships and study abroad are encouraged.

A total of 120 credits is required for graduation.

Apparel Studies. Students choosing this area of emphasis should select 12 credits of electives from TMD 222, 325, 327, 335, 345, 346, 355, and an additional 18 credits of professional electives³ from art, business, or theatre.

Fashion Merchandising. Students choosing this area of emphasis should select 12 credits of electives from TMD 222, 232, 332, 432, 442, 452, and an additional 18 credits of professional electives³ from business and/or art.

Interior Furnishings and Design. Students choosing this area of emphasis should select 12 credits of electives from TMD 226, 326, 426, 440, and an additional 18 credits of professional electives³ from art and/or business.

Textile Science. Students selecting this area of concentration should take TMD 403 and 413 as well as additional chemistry, chemical engineering, and/or statistics courses. An internship in textile manufacturing is recommended. The 18 credits of professional electives³ should be selected from MTH 111, 131; PHY 111 and 112 or 213 and 214; STA 308 or 412 or CSC 201; CHM 112, 114, 212, 226, 227, or 228.

Students in this option are encouraged to broaden and deepen knowledge of textile science by enrolling for one or two semesters at another university through an exchange program. Through a special arrangement, URI students may study for a semester or year at the textile sciences department at the University of Massachusetts–Dartmouth, which has extensive textile manufacturing equipment and analytical instrumentation. Possible course work includes fiber science, yarn spinning, warp and weft knitting, jacquard

or doobby weaving, composites, nonwovens, and manufacturing facilities design.

General TMD Program. Students may structure their own programs by concentrating course work in areas such as consumer studies, journalism, or gerontology. Selection of the 12 required TMD elective credits and the 18 professional elective credits³ should strengthen career goals and interests.

Art Minor. Students with an interest in apparel design or interior design should consider a minor in art. The requirements for this minor are determined by the Art Department and consist of 18 credits of

any art or art history courses, 12 credits of which must be at the 200 level or above. The overall URI requirements for a minor apply (see page 35). Courses particularly appropriate to TMD can be determined by consultation with TMD and Art faculty.

Double Major in a “Fashion” Language. France and Italy lead the luxury fashion market. Students enrolled in the Bachelor of Science program in Textiles, Fashion Merchandising, and Design may earn a Bachelor of Arts in either French or Italian. Students must complete the requirements for both degrees. With careful planning, no extra semesters are required. TMD students

who double major in a “fashion” language are strongly encouraged to participate in a study abroad experience and/or a professional internship in France or Italy. The Office of International Education and the respective departments help students arrange semester-long programs with affiliate universities. Students who graduate with majors in TMD and either French or Italian are well prepared to compete in the global fashion industry.

¹ Admission to the degree-granting college in the major is a prerequisite for TMD 303.

² Economics is a prerequisite for TMD 433.

³ Courses related to the student’s career goals, subject to approval by an advisor.

COLLEGE OF NURSING

Dayle H. Joseph, *Dean*
Laurie M. Lauzon-Clabo, *Associate Dean*

The College of Nursing offers a curriculum leading to the Bachelor of Science (B.S.) degree. The college also offers the Master of Science (M.S.) and the Doctor of Philosophy (Ph.D.) degrees.

Faculty

Professors Burbank, Dufault, Dunphy, Joseph, Schwartz-Barcott, and M. Sullivan; Associate Professors Coppa, Ferszt, Hames, Lauzon-Clabo, Martins, and O'Brien; Assistant Professors Leveillee and Misto; Clinical Professor Mercer; Associate Clinical Professors Doyle-Moss, Lavin, Palm, and Stout; Clinical Assistant Professors Carley, Dassie, Dugas, Gerzevitz, Kinsey, Paquette, and Thulier; Associate Professors Emeritae Feather, Godfrey-Brown, Miller, Viau, and Yeaw; Assistant Clinical Professor Emerita Evans.

URI's baccalaureate program is designed to prepare students with academic and personal potential to become professional nurses. It aims to develop mature, well-informed graduates who will meet the challenges of health care delivery and continued learning.

Nursing is a creative activity that provides human services for the promotion of health, prevention of illness, and care of the ill. It is interdependent with all other disciplines concerned with health. Nursing knowledge is viewed as a unique synthesis drawn from the humanities and the natural, biomedical, and social sciences. Students use a systems perspective as a conceptual base to nursing. This conceptual approach to nursing incorporates the whole person and his or her environment with the nursing process. Our nursing curriculum enhances students' ability to function professionally

in community and home care settings with diverse populations.

Clinical practicums include experience in numerous community agencies, schools, nursing homes, ambulatory care facilities, and hospitals throughout Rhode Island.

There are three routes to admission to the college's baccalaureate program:

1) *Students with no previous college study* begin their preparation in University College with a major in nursing. After completion of 30–40 credits (which must include required foundation courses) with a minimum 2.80 overall grade point average and a 2.20 grade point average in the foundation courses, they may apply for transfer to the College of Nursing. This process is competitive; space is limited, and priority is given to students with strong academic records.

2) *Students with college study in another major or some nursing study in another baccalaureate program* and a minimum of 45 completed credits, if accepted by the University, may be admitted directly into the College of Nursing. To enroll in clinical nursing courses, transfer students must acquire a URI-based grade point average of 2.80 or higher and 2.20 in the foundation courses. Grades from courses taken at the other institution are not included in the student's grade point average. Students who transfer from another college or university are admitted into clinical nursing courses on a space-available basis.

Because the number of students accepted into clinical courses is limited, transfer students are advised to contact the associate dean before applying for admission to be sure of placement in a specific course.

3) *Registered nurse students* who have completed diploma or associate degree programs are not required to submit scholastic aptitude scores when seeking admission. As adult students who have developed competence in basic subject areas, they may demonstrate their mastery by completing the College Level Examination Program (CLEP) sponsored by the College Entrance Exami-

nation Board. Advanced credit allowances are based on a review of the candidate's test scores and preparatory experience.

R.N. students are required to take 18 credits of nursing courses as follows: NUR 246, 253, 346, 443, 444, and 446 or 503. R.N. students must have an active Rhode Island nursing license and malpractice insurance.

A total of 120 credits is required for R.N.s to earn the B.S. degree. Thirty of those credits must be earned at URI.

The usual time for completion of all requirements for students with no previous college or nursing study is eight semesters. All students in the College of Nursing meet all the general education requirements of the University, as listed in "Undergraduate Program Requirements," pages 33–35. Entry into clinical courses is competitive, space is limited, and entry is based on grade point average and the number of semesters students have been enrolled in nursing. Because of space limitations, students may have to wait one or more semesters before being accepted into NUR 203.

A minimum grade of C (73) must be achieved in all required nursing courses and in each foundation course. Students will not be allowed to repeat a required nursing course more than once. The faculty reserves the right to require withdrawal from the college of a student who gives evidence academically and/or personally of inability to carry out professional responsibility in nursing. The student is limited to 18 credits per semester except by permission of the dean for special program adjustments or when participating in the Honors Program.

General expenses are approximately the same as for other University students. Special items include uniforms, nursing equipment, transportation, academic achievement testing, and lab fees for each clinical course. The use of an automobile or funds to meet public transportation costs is required for the clinical experiences.

Students must maintain car insurance as required by state law.

The program is approved by the Commission on Collegiate Nursing Education and the Rhode Island Board of Nurse Registration and Nursing Education. The graduate is eligible for examination for professional licensure as a registered nurse (R.N.).

The law requires criminal background checks for persons providing care in community agencies. Updated health requirements and CPR certification are mandated throughout the clinical courses.

Curriculum Requirements

Foundation Courses. The following are required before transfer from University College: CHM 103 (3), 124 (3); NUR 103 (3); PSY 113 (3); BIO 121 (4), 242 (3), 244 (1); MIC 201; one writing (Cw) course (3), URI 101 (1).

The following are prerequisites for some nursing courses, and therefore are recommended during the first three semesters: NFS 207 (3); MIC 201 (4); PSY 232 (3); SOC 100 (3); STA 220 (3) or PSY 300 (3).

An example of the curriculum plan follows. (Individual programs may vary.)

Freshman Year

First semester: 14 credits

- 4 BIO 121 Human Anatomy
- 3 SOC 100 General Sociology
- 3 CHM 103 Introductory Chemistry Lecture
- 1 URI 101 Freshman Seminar
- 3 General Education requirement (Cw)

Second semester: 16 credits

- 3 BIO 242 Human Physiology
- 1 BIO 244 Human Physiology Laboratory
- 3 CHM 124 Introduction to Organic Chemistry
- 3 PSY 113 General Psychology

- 3 NUR 103 Professional Practice in Health and Illness
- 3 General Education requirement (C)

Summer Session

3–6 General Education or free elective requirements (to reduce junior year requirements)

Sophomore Year

First semester: 16 credits

- 4 MIC 201 Introductory Medical Microbiology
- 3 PSY 232 Developmental Psychology
- 3 NFS 207 General Nutrition
- 3 NUR 203 Comprehensive Health Assessment
- 3 STA 220 Statistics in Modern Society (or PSY 300 Quantitative Methods in Psychology)

Second semester: 18 credits

- 3 NUR 213 Pathophysiology
- 3 NUR 233 Foundations of Nursing Practice with Older Adults
- 3 NUR 234 Practicum in Foundations of Nursing with Older Adults
- 3 NUR 253 Nursing Research
- 3 General Education course
- 3 Free Elective

Junior Year

First semester: 15 credits

- 6 NUR 323 Medical-Surgical Nursing
- 3 NUR 324 Practicum in Medical-Surgical Nursing
- 3 BPS 333 Nursing Pharmacology
- 3 Free Elective

Second semester: 15 credits

- 3 NUR 333 Psychiatric-Mental Health Nursing
- 3 NUR 334 Practicum in Psychiatric-Mental Health Nursing
- 3 NUR 343 Nursing in Childbearing and Reproductive Health

- 3 NUR 344 Practicum in Childbearing and Reproductive Health Nursing
- 3 General Education course

Senior Year

First semester: 15 credits

- 3 NUR 433 Nursing of Children
- 3 NUR 434 Practicum in Nursing of Children
- 3 NUR 443 Community Health Nursing
- 3 NUR 444 Practicum in Community Health Nursing
- 3 General Education course

Second semester: 15 credits

- 3 NUR 463 Advanced Medical-Surgical Nursing
- 3 NUR 464 Practicum in Advanced Medical-Surgical Nursing
- 3 NUR 474 Leadership in Professional Nursing [**capstone**]
- 6 General Education courses

Required Nursing Courses. The following 60 credits are required: NUR 103, 203, 213, 233, 234, 253, 323 (6 credits), 324, 333, 334, 343, 344, 433, 434, 443, 444, 453, 463, 464, and 474. Students must maintain an overall minimum GPA of 2.20 in order to progress in the NUR courses.

General Education Requirements and Electives.

The general education requirements must be completed with the exception that one of the following divisions may be reduced by three credits: fine arts and literature (A), letters (L), or foreign language and culture (F).

Six credits of free electives are required. A total of 124 credits is required for graduation.

Minor in Thanatology. For information on this interdisciplinary minor dealing with loss, death, and grief, please turn to page 39.

COLLEGE OF PHARMACY

Ronald P. Jordan, *Dean*
Joan M. Lausier, *Associate Dean*
E. Paul Larrat, *Associate Dean*

Entering freshmen are admitted to URI's six-year entry-level Doctor of Pharmacy (Pharm.D.) degree. The college also awards a baccalaureate in science (B.S.) and two graduate degrees: the Master of Science (M.S.) and the Doctor of Philosophy (Ph.D.) in pharmaceutical sciences, offered by both departments, Biomedical and Pharmaceutical Sciences and Pharmacy Practice.

Faculty

Biomedical and Pharmaceutical Sciences: Professor Chichester, *chairperson*. Professors Cho, Kislalioglu, Lausier, Parang, Rodgers, Rosenbaum, Shaikh, Shimizu, Yan, and Zia; Associate Professors Rowley and Zawia; Assistant Professors Akhlaghi, Deng, King, Seeram, and Udway; Professors Emeriti Needham and Swonger.

Pharmacy Practice: Associate Professor Kogut, *chairperson*. Professors Barbour, Dufresne, Hume, Larrat, Owens, and Tempkin; Associate Professors Bratberg, Charpentier, Feret, Lasky, Lin, MacDonnell, Matson, Orr, Pawasauskas, and Taveira; Assistant Professors Akus, Cohen, Cowles, Estus, Goren, LaPlante, Marcoux, Mersfelder, Quilliam, and Ward.

Admission Requirements

Each admission candidate is given individual consideration. However, a minimum of 18 units of college (secondary school) preparatory work are expected:

- 4 in English
- 3 in algebra and plane geometry
- 2 in a physical or natural science
- 2 in history or social science
- 2 in the same foreign language
- 5 additional units to total 18

Successful candidates typically have high grades in science and mathematics, do well in SATs, and often have earned advanced placement or college credit while in high school.

Doctor of Pharmacy (Pharm.D.)

The six-year Doctor of Pharmacy curriculum is patterned on accepted programs of study recommended by the American Association of Colleges of Pharmacy, the American Council on Pharmaceutical Education, and other interested organizations. The Doctor of Pharmacy is accredited by the American Council on Pharmaceutical Education (20 North Clark Street, Suite 2500, Chicago, Illinois, 60602; acpe-accredit.org).

Medication therapy management is the responsible provision of drug therapy to achieve specific outcomes that improve a patient's quality of life. A pharmacist, in cooperation with a patient and other health-care professionals, designs, implements, and monitors a plan of care that will produce desired patient outcomes. A key element in medication therapy management is that the pharmacist accepts *personal* responsibility in achieving the desired outcomes. In learning to provide medication therapy management, pharmacy students must exhibit the highest level of ethical behavior and moral values in all of their decision-making, as well as in their actions both in and outside of the college. Furthermore, students must acknowledge that the profession and medication therapy management are based foremost on caring, trust, and communication for the benefit of patients and society in general. All students must be committed to maintaining these standards, to fostering the professional development of other pharmacy students, and to responding appropriately when the ethical and moral standards of the profession have been breached.

Graduates of our program have a strong record of passing the national licensing examination (NABPLEX). Average scores over the past five years are in the 90 percent-ages, with scores for 2008 graduates taking the exam for the first time at 97.6%. The program in pharmacy provides preparation for community and institutional pharmacy practice. Students have the opportunity to take professional electives that will advance their knowledge in different areas of phar-

macy, including hospital, clinical, manufacturing, managed care, drug analysis, administration, and research.

A recent survey of alumni indicates that 64% work in a community practice setting, while 11% work in hospitals. Others are pursuing advanced training in residencies (19%), fellowships (3%), and graduate school (3%). Job responsibilities vary from staff pharmacists, manager, clinical specialist, consultant, executive, to professor. Seventy-one percent agree that their educational experience at URI contributed to their leadership abilities in the profession.

Technical Standards. In addition to the academic requirements for admission, applicants must also meet the technical standards that the college deems essential for training and practice in the profession of pharmacy. Students who have concerns about their ability to meet these standards should contact the associate dean of the college. When requested, the college will provide reasonable accommodation to otherwise qualified students with disabilities. Disabled students must work with and be approved by URI's Disability Services for Students.

These functions include, but are not limited to:

Observation: A candidate with or without accommodations must be able to observe demonstrations and experiments in the basic sciences. A candidate must be able to observe a patient accurately at a distance and close at hand. The candidate must be able to visually observe and interpret presented information. This will necessitate the functional use of vision, hearing, and somatic senses.

Communication: A candidate with or without accommodations must be able to communicate effectively and sensitively with patients, caregivers, faculty/staff, and all members of the healthcare team. The focus of this communication is to elicit information, describe changes in mood, activity, and posture, and perceive nonverbal communication. An applicant must be able to communicate effectively and efficiently in oral and written English.

Sensory/Motor: The candidate with or without accommodations must have sufficient motor function and skills necessary to perform basic tasks in the practice of pharmacy. Examples of such tasks may include the compounding of medicinals, physical assessment, the administration of drugs, and the provision of basic cardiac life support. Such actions require the coordination of both gross and fine muscular movements, equilibrium, and functional use of the senses.

Intellectual: A candidate must have the ability to measure, calculate, reason, analyze, synthesize, and integrate information that is essential to fully develop these skills. A candidate must be fully alert and attentive at all times in clinical settings.

Behavioral/Social: A candidate must be of sufficient emotional health to utilize fully his or her intellectual abilities, the exercise of good judgment, and the prompt completion of all patient care responsibilities. A candidate must possess the ability to develop mature, sensitive, and effective relationships with patients. A candidate must be able to tolerate physically and emotionally taxing workloads and to function effectively under stress. A candidate must be able to adapt to changing environments, to display flexibility and learn to function in the face of uncertainties inherent in the clinical problems of many patients. A candidate must possess compassion, integrity, interpersonal skills, and motivation to excel in pharmacy practice.

Health. Certain illnesses impair a student's performance. These include, but are not limited to, active drug and/or alcohol addiction, severe depression, and other psychiatric illnesses. It is not permissible for students to interact with patients while impaired by these conditions. It is the policy of the College of Pharmacy to encourage recognition of these conditions and to support treatment so that the student may resume his or her studies in the college.

Selection Factors. Due to the large number of applications received for a limited number of spaces, admission to URI's College of Pharmacy is highly selective. The Admission

Office carefully evaluates each candidate's strength in the following areas:

High School Transcript including the rigor of the high school curriculum and academic performance.

Standardized Test Scores (only SAT or ACT results are reviewed).

Personal Essay (including an additional paragraph required of all Pharmacy applicants—details are available on the application).

Letters of Recommendation (a minimum of two letters is required: one from a science or math teacher and one from a guidance counselor or a teacher from another subject area).

Extracurricular Activities (including employment experiences) and unique talents.

Pharmacy applicants are strongly encouraged to submit all of their application materials by the Early Action deadline. The Admission Committee makes every effort to notify pharmacy applicants of their admission status by January 31.

Professional Standards of Behavior

For Pharmacy Students. The College of Pharmacy demands that its students adhere to the highest standards of professional behavior. Specific requirements include the following:

Pledge of Professionalism: The College of Pharmacy expects all students to sign a pledge of professionalism when they enter the professional program.

Honesty and Academic Integrity: Students are expected to abide by the University of Rhode Island's Community Standards of Behavior as outlined in the University of Rhode Island Student Handbook. Pharmacy students are expected to adhere to the highest standard of academic integrity in both the pre-professional and professional programs. Any evidence of cheating or plagiarism may be grounds for dismissal from the program (see URI Student Handbook for definitions of cheating and plagiarism).

Ethical Values: Students must demonstrate the highest level of professional demeanor and behavior, and must perform in an ethical manner in all dealings with peers, faculty, staff, preceptors, and patients.

Students who violate these standards of behavior may be given a reprimand, placed on probation, suspended for a period of time, required to acquire professional evaluation and counseling or other medical care, required to complete community service, or dismissed from the program. Incidents including, but not limited to, academic dishonesty, violation of HIPPA or privacy regulations, chemical impairment, violation of state and federal laws, sexual harassment, may delay or permanently prohibit progression in the Pharm.D. curriculum.

Requirements for Progression to the Professional Program.

Pharm.D. students must request transfer from University College to the College of Pharmacy at the end of three semesters. During their sophomore year, all students are required to have a formal interview. The student's progression to the professional program will be contingent upon a successful interview. The interview is designed to assess students' commitment to the profession of pharmacy, knowledge of the profession, and ability to communicate with patients.

Only those pharmacy students having a 2.50 grade point average or better in required preprofessional courses (CHM 101, 102, 112, 114, and 227; BIO 101, 121, 242, and 244; MTH 131; and MIC 201) with no grade less than C- in any of these courses, and an overall grade point average of 2.00 will be admitted at this time. Successful candidates must maintain a grade point average of 2.50 in remaining prerequisite courses (CHM 226, 228; STA 307; and BCH 311). Students who lose their seat at the end of three semesters will be considered for admission on a competitive basis along with other URI undergraduate students and transfer students from other institutions at the end of four semesters. Applicants with a grade point average of less than 2.50 for the designated preprofessional courses will not be considered for admission to the college. For purposes of admission among transfer students (both internal and external), all of the preprofessional courses listed above, plus CHM 226, 228, STA 307, and BCH 311 (or equivalent

courses) must be completed. All applicants must have a 2.50 in these courses, and successful candidates will be competitively selected from the applicant pool. In addition, all students must complete WRT 106, ECN 201, COM 100, and PHL 212 as a specific component of their general education prior to admission to the professional curriculum. Beginning in the fall of 2009, PCAT exams, work experience, and letters of recommendation will be required for all transfer applicants. Please note that it is a competitive program and seats are limited. For a more detailed description of these requirements, see the Admission Web site.

Beginning in the professional curriculum third year (P1) students should have their own laptop computer for use in the classroom. There are lease and purchase options at the University Bookstore for interested students.

Unless otherwise indicated, courses offered by the college are restricted to pharmacy majors.

Retention and Graduation Requirements.

Students must earn a minimum grade point average of 2.00 overall and 2.20 in all professional courses in order to qualify for graduation in the Pharm.D. program. Students can repeat up to ten credits of pharmacy courses in which they received a C- or less in order to achieve the 2.20 GPA graduation requirement.

The student whose cumulative GPA in professional courses falls below a 2.00 at the end of any semester will be dismissed from the program. Students will not be allowed to proceed into their sixth-year (P4) rotations without at least a 2.00 GPA in required professional pharmacy courses.

Professional and/or legal exigencies arise from time to time which may necessitate changes in a pharmacy course, progression, and/or graduation requirements. Students should review their status with academic advisors on a timely basis and refer to current publications for updated information.

Students in certain other New England states may enroll in pharmacy under the New England Regional Student Program. (See page 31 for current changes in this program.)

Six-year Entry Level Pharm.D. Curriculum Requirements. A total of 202 credits is required for graduation. Proficiency in American Red Cross standard first aid, community CPR, and physical assessment¹ is also expected of each student prior to advanced practice rotation.

Experiential Rotations. Introductory and advanced experiential rotations may be scheduled at a distance from the Kingston campus. These rotations contribute importantly to the depth and breadth of the experiential program. While the college makes every effort to accommodate student requests regarding rotations, students should anticipate having some rotations assigned at a distance. For these rotations, students are responsible for their costs of transportation and housing if needed.

Criminal Background Check. Certain hospitals, clinical facilities, and other professional sites that participate in both the introductory practice experiences (IPPE) and advanced practice experiences (APPE) require students to undergo a criminal background check. Students with criminal records may be denied positions at these sites. As a result, their progression to meet the degree requirements will be impeded.

Drug Testing. Many hospitals, clinical facilities, and other professional sites that participate in both the introductory practice experiences (IPPE) and advanced practice experiences (APPE) require students to undergo a drug test. Students who test positive for an illegal drug will be denied positions at these sites. As a result, their progression to meet the degree requirements will be impeded.

Intern License Requirement. All students in the professional Pharm.D. program must obtain an intern license through the board of pharmacy of the state(s) in which they have their introductory and advanced practice experiences. Registration as an intern pharmacist is a requirement of the program; students must apply for a license prior to the fall semester of their first professional year.

Students must hold a valid intern license when they enter the fall semester of their first professional year and maintain it

throughout the professional program. For experiential coursework, students must have a Rhode Island license as well.

To be eligible for an intern license, students must be currently enrolled in a pharmacy program. Intern licenses must be returned to the board if a student withdraws or takes a leave of absence from the college.

Application for a license requires disclosure of any convictions of federal, state, or local statutes (including driving under the influence).

Pre-Professional Curriculum

First Year

First semester: 15 credits

CHM 101 (3), 102 (1); COM 100 or WRT 106 (3); BIO 101 (4); one 3-credit elective or PHL 212 (3); and URI 101 (1).

Second semester: 17 credits

CHM 112 (3), 114 (1); MTH 131 (3); COM 100 or WRT 106 (3); BIO 121 (4), and one 3-credit elective or PHL 212 (3).

Second Year

First semester: 17 credits

CHM 227 (3); ECN 201 (3); MIC 201 (4); BIO 242 (3), 244 (1), and one 3-credit elective.

Second semester: 17 credits

BCH 311 (3); CHM 228 (3), 226 (2); STA 307 (3), and 6 credits of electives.

Professional Curriculum

(At this time, the professional curriculum is being modified. Presented below is a framework to show the course distribution by year.)

First Professional Year (P1)

First semester: 15 credits

PHP/BPS 311 (2); BPS 301 (2), 303 (2), 305 (2), 313 (2), 318 (1), 321 (2); PHP 317 (2).

Second semester: 17 credits

PHP/BPS 310 (2); BPS 325 (2), 326 (1), 334 (2); PHP 305 (3), 316 (3), 332 (3), 340 (1); PHC 327 (1)².

*Second Professional Year (P2)**First semester: 15 credits*

PHP/BPS 409 (2), 418 (3); BPS 416 (1), 421 (2); PHP 401 (3), 413 (3), 450 (0); PHC 417 (1)².

Second semester: 17 credits

PHP/BPS 312 (2); BPS 322 (2), 403 (3); PHP 324 (2), 451 (0); FSN 444 (3); professional elective (3); PHC 427 (1)² and lab to be determined (1).

*Third Professional Year (P3)**First semester: 17 credits*

PHP/BPS 410 (2), 515 (1); BPS 422 (2), 504 (3); PHP 414 (3), 503 (2); professional elective (3); PHC 517 (1)².

Second semester: 15 credits

PHP/BPS 526 (2, pending approval); BPS 521 (3); PHP 504 (3), 513 (2), 516 (1); professional elective (3); PHC 527 (1)².

Fourth Professional Year (P4)

Combined summer, first, and second semester: 36 credits

To complete the curriculum, students must complete six 6-week advanced practice experiences in community (PHP 591), ambulatory care (PHP 595), inpatient (PHP 592), institutional (PHP 594), and two different elective areas (PHP 593) for a total of 36 credits. The rotations will take place over summer, fall, and spring semesters in any order and are all capstone requirements in the program.

Doctor of Pharmacy Professional Electives.

As part of the College's professional curriculum, students may select three courses to improve their knowledge and understanding in a variety of areas including pediatric pharmacotherapy, geriatric pharmacotherapy, advanced topics in self care; specialty clinical areas such as infectious diseases, endocrine, and neuropsychiatry; pharmacoepidemiology and pharmacoecomics; and research.

Students desiring to expand their understanding in pharmacy practice may consider courses from the following sections: PHP 430, 440, 460, 505, 520, 540, 542, 550,

555, 560, and 580; PHP/BPS 519; HSS 530; PSY 460; NFS 551 and 552; and MSI 310.

Students desiring to expand their understanding in biomedical, pharmaceutical, and pharmacy research may select professional electives that focus learning on the theory and practice of laboratory research techniques, the evaluation and quantification of results, and on the understanding and interpreting of scientific literature. They will develop skills for oral and written communication of hypotheses, methods, and interpretations, and will carry out basic scientific research in one of the following four areas of specialization: medicinal chemistry and pharmacognosy, pharmaceuticals and pharmacokinetics, pharmacoepidemiology and pharmacoecomics, or pharmacology and toxicology. Students will develop a program of study in conjunction with a faculty advisor in their area of interest. All students will take 9 credits of course work at the graduate level and may take an elective advanced practice experience in research. Students focusing their elective professional courses in this manner may also be able to apply and work toward an M.S. degree with a focus in one of the following areas:

Medicinal Chemistry and Pharmacognosy: Molecular mechanisms of chemical carcinogenesis; combinatorial chemistry; solid-phase peptide synthesis; screening, isolation, and structure elucidation of physiologically-active natural products; biosynthesis of microbial and plant natural products; herbal medicine.

Pharmaceuticals and Pharmacokinetics: Design, development, production, evaluation, and regulatory approval of pharmaceutical and self care products as well as pharmacokinetic and pharmacodynamic studies using virtual, clinical, and preclinical data, often with an emphasis on population approaches.

Pharmacoepidemiology and Pharmacoecomics: Health and economic outcomes research pertaining to pharmacotherapy as used in human populations. Specializations include medication adherence, decision and cost-effectiveness analyses, post-marketing surveillance, epidemiologic methods, and quality improvement and measurement.

Pharmacology and Toxicology: Research projects explore the mechanisms involved in various disease states and their pharmacological intervention, and mechanisms of toxicity of various environmental agents. Ongoing topics include the effects of hormonal imbalances and antihypertensive agents on cardiac function and metabolism in hypertension, diagnosis and treatment of arthritis, effect of septic shock on drug metabolism, developmental neurotoxicity of environmental agents, hepatotoxicity and nephrotoxicity of heavy metals, interindividual variation in metabolism of heterocyclic amine carcinogens, regulation and genetic heterogeneity of enzymes involved in drug and xenobiotic metabolism, calcium- and non-calcium mediated pathways of cell death, and the development of inhibitors to cell signaling events.

Double Major in Pharmacy and French.

Qualified students can graduate in six years with both a Pharm.D. degree and a B.A. degree in French. Students must complete at least two five-week rotations in a French-speaking country and earn 30 credits of French, six of which must be from 400-level courses. French 101 and 102 do not count among the mandatory 30 credits. It is recommended that students wishing to double major come to URI with four years of high school French and advanced placement credits.

B.S. in Pharmaceutical Science (B.S.P.S.)

The four-year program offers students a solid foundation in the basic sciences, broad exposure to the liberal arts, and expertise in one of several areas of specialization within the pharmaceutical sciences. It is designed to provide educational and training experiences that prepare students for careers in the pharmaceutical, consumer product, and health care industries. Graduates of the B.S.P.S. program will be qualified to seek a diverse range of career options that include: research and development, manufacturing, product marketing, sales,

testing, and administrative positions within the pharmaceutical industry; research and regulatory oversight careers within government agencies; and research and teaching positions in academia. As a prelude to many of these career opportunities, the program prepares students for graduate studies in the expanding fields of pharmaceutical and biomedical sciences.

The first two years of the program include rigorous basic science requirements plus a broad exposure to the humanities, arts, and social sciences. The science component of the curriculum is consistent with the admission requirements of most basic science graduate programs and professional schools. Courses offered in the third and fourth year will be drawn primarily from our existing curriculum, and will be taught by Department of Biomedical and Pharmaceutical Sciences (BPS) faculty. They provide solid, fundamental training in the pharmaceutical sciences. The fourth year curriculum also includes BPS course offerings and selected electives from other departments on campus, such as the basic sciences and business. Students may also elect to obtain course credits for laboratory research performed under the guidance of a faculty mentor. These fourth year offerings will present students with the opportunity, under the supervision of the B.S.P.S. program advisor, to tailor their academic program to prepare them for the specific career paths that they choose. The 120-credit requirement for graduation provides education and training comparable to that offered by similar B.S.P.S. programs, and conforms to University credit requirements for four-year degree programs.

B.S.P.S. Curriculum Requirements. The curriculum contains four distinct components. The first component consists of 35 credits of general education requirements that will provide broad exposure to the humanities, arts, and social sciences. The second component consists of 41 credits of basic science and mathematics courses that will deliver a firm foundation in the sciences, and satisfy admission requirement for

most basic science graduate programs and professional schools. The third component is the B.S.P.S. core requirement, consisting of 38 credits of new and existing BPS/PHP courses, which will offer students a strong, basic, and applied understanding of the pharmaceutical sciences. The fourth component of 6 credits, comprising B.S.P.S. electives, is drawn from upper level B.S.P.S. courses and selected electives from other programs on campus, particularly those from the basic sciences and business. These courses allow our students to tailor a program of study to suit their specific career goals.

Freshman Year

First Semester: 15 credits

CHM 101 (3), 102 (1); BIO 101 (4); COM 100 (3); URI 101 (1); general education elective (3)

Second semester: 15 credits

CHM 112 (3), 114 (1); BIO 121 (4); MTH 141 (4); WRT 106 (3)

Sophomore Year

First Semester: 17 credits

CHM 227 (3); MIC 201 (4); BIO 242 (3); PHY 111 (3), 185 (1); ECN 201 (3)

Second semester: 17 credits

CHM 226 (2), 228 (3); BCH 311 (3); STA 308 (3), general education electives (6)

Junior Year

First Semester: 15 credits

BPS 301/303/305 (6); 311 (2); 313 (2); 321 (2); B.S.P.S. or general education elective (3)

Second semester: 13 credits

BPS 325 (2), 443 (2), 445 (3); general education electives (6)

Pharmaceutics Specialization

Senior Year

First semester: 15 credits

BPS 425 (3), 487/587 (3), 503 (3); PHP 580 (3); CHM 522 (3)

Second semester: 13 credits

BPS 405 (3), 442 (3), 451 (4); B.S.P.S. or general education elective (3)

Natural Products Specialization

Senior Year

First semester: 15 credits

BPS 425 (3), 487/587 (3), 503 (3); PHP 580 (3); CHM 551 (3)

Second semester: 13 credits

BPS 442 (3), 451 (4), 535 (3); B.S.P.S. or general education elective (3)

Cosmetic Specialization

Senior Year

First semester: 15 credits

BPS 425 (3), 487/587 (3), 503 (3), 530 (3); PHP 580 (3)

Second semester: 13 credits

BPS 442 (3), 451 (4), 560 (3); B.S.P.S. or general education elective (3)

Pharmacology/Toxicology Specialization

Senior Year

First semester: 15 credits

BPS 425 (3), 487/587 (3), 503 (3), 551 (3); PHP 580 (3)

Second semester: 13 credits

BPS 442 (3), 451 (4), 533 (3); B.S.P.S. or general education elective (3)

¹ PHP 900

² Interactive learning courses will be shared by PHP and BPS under the code of PHC.