

## Special Programs

A great university must, while retaining the traditional programs at the heart of a modern education, expand beyond them to meet the wide-ranging needs of its students. FDU offers combined degree programs, allowing students to earn undergraduate and graduate degrees in less time than traditional routes; honors programs for students of top academic abilities; overseas campuses where students learn about other cultures while studying their academic disciplines; special degree-granting programs for adult learners; Reserve Officers' Training Corps programs; preprofessional degree options; and internships and cooperative studies offered in conjunction with business and industry, which offer students experience in the working world of their chosen fields.

## Combined Degree Programs

The University, keeping in mind the needs and aspirations of its best students, offers a variety of programs specially tailored to bring out the best in them.

Several programs allow students to combine graduate and undergraduate degrees in less time than it would take if each were to be pursued separately. They include:

### Baccalaureate/Master

- Bachelor of Arts/Master of Public Administration (five years), see page 205;
- Bachelor of Arts or Science/Master of Arts in Teaching combined degree (five years), see page 206;
- Bachelor of Arts or Science/Master of Arts in Teaching with a Dual Certification in Elementary and Special Education (five years), see page 208;
- Bachelor of Arts in communication/Master of Arts in media and professional communication (five years), see page 209;
- Bachelor of Arts in communication studies/Master of Arts in communication, (accelerated) see page 210;
- Bachelor of Arts in criminal justice/Master of Arts in criminal justice, see page 211;
- Bachelor of Arts in history/Master of Public Administration (five years), see page 211;
- Bachelor of Arts in political science/Master of Public Administration (five years), see page 212;
- Bachelor of Arts in psychology/Master of Arts in forensic psychology (five years), see page 213;
- Bachelor of Arts in psychology/Master of Arts in general/theoretical psychology (five years), see page 214;
- Bachelor of Arts in psychology/Master of Arts in industrial/organizational psychology (five years), see page 215;
- Bachelor of Arts in psychology/Master of Social Work with New York University (five years), see page 216;
- Bachelor of Arts in sports administration/Master of Arts in sports administration (five years), see page 217;
- Bachelor of Science in accounting/Master of Science in accounting (five years), see page 218;

- Bachelor of Science in accounting/Master of Business Administration or Master of Science in supply chain management or Master of Science in Taxation (five years, 4+1), see page 219;
- Bachelor of Science in biochemistry/Master of Science in applied clinical nutrition with School of Applied Clinical Nutrition, New York Chiropractic College (five years), see page 219;
- Bachelor of Science in biochemistry/Master of Science in chemistry with a concentration in pharmaceutical chemistry (five years), see page 220;
- Bachelor of Science in biochemistry/Master of Science in cosmetic science (five years), see page 221;
- Bachelor of Science in biology/Master of Science in acupuncture and oriental medicine with Finger Lakes School of Acupuncture and Oriental Medicine, New York Chiropractic College (five years), see page 222;
- Bachelor of Science in biology/Master of Science in biology (five years), see page 224;
- Bachelor of Science in business administration or entrepreneurship or finance or management or marketing/Master of Business Administration in accounting or business administration or entrepreneurship or finance or information systems or international business or management or marketing or pharmaceutical management (five years, 4+1), see page 225;
- Bachelor of Science in business administration or entrepreneurship or finance or management or marketing/Master of Science in accounting or supply chain management or taxation (five years, 4+1), see page 225;
- Bachelor of Science in chemistry/Master of Science in chemistry with a concentration in pharmaceutical chemistry (five years), see page 225;

- Bachelor of Science in chemistry/Master of Science in cosmetic science (five years), see page 227;
- Bachelor of Science in computer science/Master of Science in computer science (five years), see page 228;
- Bachelor of Science in computer science/Master of Science in management information systems (five years), see page 229;
- Bachelor of Science in Electrical Engineering/Master of Science in computer engineering (five years), see page 230;
- Bachelor of Science in Electrical Engineering/Master of Science in Electrical Engineering (five years), see page 231;
- Bachelor of Science in hotel and restaurant management/Master of Science in hospitality management studies (five years), see page 232;
- Bachelor of Science in information technology/Master of Science in computer science (five years), see page 234.

### Baccalaureate/Doctorate

- Bachelor of Science in biochemistry/Doctor of Pharmacy with FDU School of Pharmacy and Health Sciences (seven years), see page 235;
- Bachelor of Science in biochemistry or chemistry/Doctor of Pharmacy with Bernard J. Dunn School of Pharmacy, Shenandoah University (seven years), see page 239;
- Bachelor of Science in biology/Doctor of Chiropractic with Life Chiropractic College West, Logan College of Chiropractic, New York Chiropractic College, Palmer College of Chiropractic or Western States Chiropractic College, (six years, four months), see page 241;
- Bachelor of Science in biochemistry or biology or chemistry/Doctor of Dental Medicine with Lake Erie College of Osteopathic

Medicine School of Dental Medicine (eight years), see page 242;

- Bachelor of Science in biology/Doctor of Dental Medicine with Rutgers School of Dental Medicine, (seven years), see page 243;

- Bachelor of Science in biology/Medical Doctor with Poznan University of Medical Sciences, (seven years), see page 244;

- Bachelor of Science in biology/Medical Doctor with Ross University School of Medicine, (eight years), see page 246;

- Bachelor of Science in biology/Medical Doctor with Universidad Autónoma de Guadalajara School of Medicine (seven years), see page 248.

- Bachelor of Science in biology/Doctor of Osteopathic Medicine with Lake Erie College of Osteopathic Medicine (seven years), see page 248;

- Bachelor of Science in biochemistry or biology or chemistry/Doctor of Osteopathic Medicine with Lake Erie College of Osteopathic Medicine (eight years), see page 248;

- Bachelor of Science in biology/Doctor of Pharmacy with FDU School of Pharmacy and Health Sciences (seven years), see page 250;

- Bachelor of Science in biology/Doctor of Physical Therapy with Rutgers School of Health Related Professions, (six years), see page 254;

- Bachelor of Science in biology/Doctor of Podiatric Medicine with New York College of Podiatric Medicine (seven years), see page 255;

- Bachelor of Science in biology/Doctor of Veterinary Medicine with Ross University School of Veterinary Medicine, (seven years), see page 257;

- Bachelor of Science in chemistry/Doctor of Pharmacy with FDU School of Pharmacy and Health Sciences (seven years), see page 259;

For more information on the array of accelerated programs available at FDU, please contact your college dean or school director.

Students matriculated into the accelerated five-year programs leading to the B.A./M.P.A., the B.A./M.A. and the B.S./M.S. degrees (except in accounting) normally retain undergraduate status for the full five years needed to complete the requirements for both degrees, which are then conferred together. Students in these

curricula who require matriculation as graduate students may request conferral of the baccalaureate degrees upon completion of 120–123 credits (121 credits for Silberman College of Business) and the B.A. or B.S. requirements. The degree will then be awarded in accordance with normal University procedures. Students electing this option are advised that they may become ineligible for certain benefits upon achieving graduate-student status.

Students matriculated into the five-year programs leading to the M.B.A. (4+1) or M.S. in supply chain management (4+1) or the M.A.T. normally complete their undergraduate programs and receive their baccalaureate degrees before entering the graduate portion of the program.

## **B.A./M.P.A.**

### **Five-year Program**

Undergraduates who take a major either in history or in political science may, during their junior year, apply to the Master of Public Administration program offered by the Anthony J. Petrocelli College of Continuing Studies.

Students who apply and gain admission to the M.P.A. program take three M.P.A. courses (PADM6602 Budgeting and Finance, PADM6603 Public Policy Administration and PADM6680 Information Technology Management) as free electives.

Besides counting toward the B.A., the credits earned in these three graduate courses will count toward the 39 credits that the M.P.A. requires. For the B.A., all University College general education requirements (pages 127–128) and all requirements pertaining to the undergraduate major (history, page 172; political science, pages 196–197) must be satisfied. For the Metropolitan Campus, go to page 211 for the B.A. in history/M.P.A. combined degree and page 212 for the B.A. in political science/M.P.A. combined degree.

# Combined Degree Programs

B.A. or B.S./M.A.T. QUEST Teacher Preparation

## **B.A. or B.S./M.A.T. QUEST Teacher Preparation Five-year Program**

The QUEST (*QU*ality in *E*ducation, *S*chools and *T*eaching) program is offered by the Peter Sammartino School of Education at the Florham Campus, Madison, New Jersey, and the Metropolitan Campus, Teaneck, New Jersey.

The program is open to students who wish to be certified to teach at the pre-school (P-3), elementary or secondary-school level in the area of their liberal arts or science major. All tracks result in the B.A. or B.S. degree in a liberal arts/science major with graduate-level advanced course work toward a Master of Arts in Teaching (M.A.T.) degree. See below and pages 62 and 130 for additional information.

Students may select a QUEST program in general education (regular classroom teacher) at the P-3, elementary or secondary level. QUEST also offers the opportunity to select a dual certification program in elementary education (K-6) and Teacher of Students with Disabilities (TSD). Students desiring the dual certification program need to join QUEST in their freshman year.

### **QUEST Program**

Students typically enter the program in their freshman year. FDU students and admitted transfer students may enroll in QUEST in their sophomore or junior years, subject to an interview with the QUEST adviser, a review of transcripts and meeting QUEST program admissions and matriculation requirements.

Admission and matriculation in the QUEST program are as follows:

Freshmen entering the QUEST program are required to have a high school grade point average of 3.00 or greater and a minimum of 1,000 on the SAT (combined verbal and mathematics) or a 21 composite on the ACT. Sophomores and juniors requesting admission to the QUEST program must have a college/university cumulative grade point ratio (CGPR) of 3.00 or greater. Students entering the QUEST program are not formally matriculated into QUEST until they have 60 credits and have met the following requirements:

- 60 earned credits;
- CGPR of 3.00 or greater; and
- Pass the new Praxis CORE Battery,

which consists of three tests in basic skills as follows:

1. Core Academic Skills for Educators: Reading
2. Core Academic Skills for Educators: Writing
3. Core Academic Skills for Educators: Mathematics

Students are required to take the CORE Battery by the end of their sophomore year to continue in the QUEST program. Juniors seeking admission to QUEST must take the CORE Battery during their first semester in the program. All three exams must be passed to become matriculated. Students who do not pass all three exams may be restricted in taking education courses. Students may be exempted from the CORE Battery if they meet one of the following alternatives:

- SAT: 1,660 combined score (critical reading, mathematics and writing)
- ACT: 23

In addition to the academic study listed below, beginning in the first year, the program offers extensive field experiences in select public schools.

Faculty advisers work closely with students, individually and/or in groups, to provide guidance as students complete their programs of study.

### **Program Outline**

1. Students must satisfy all general education requirements and specific departmental requirements for their liberal arts/science major in order to be eligible for a B.A. or B.S. degree in their area of specialization. Students in the QUEST program must major in a liberal arts/science discipline and will take from 30 to 31 credits in education as free electives as undergraduates. These credits satisfy the requirement for a “minor.” All QUEST students majoring in psychology, sociology or humanities are required to have a minor (15–18 credits) in a content area and/or a middle-school content endorsement.

2. Students must continue to meet grade point requirements (3.00) throughout their time in the QUEST program.

3. After 60 earned credit hours, students may be formally matriculated into the QUEST program. To matriculate, a student must have a 3.00 cumulative grade point ratio and a passing score on the CORE Battery exams in reading, writing and mathematics as described on page 130. All three exams must be passed (for

all majors and at all grade-certification levels). Students should take the CORE Battery in their freshman or sophomore year. Students who have 60 credits and have not passed all three sections of the CORE Battery will be restricted in the number of education courses they may take until they pass all three exams.

4. Students will be advised when to take their Content Knowledge Praxis II exams. They will also be advised as to the current required exam(s) for the certification sought. The Praxis II exam is needed to obtain New Jersey State certification.

5. At the end of four years, students who have met all requirements will be eligible for a B.A. or B.S. degree and will have up to 15 graduate credits towards their Master of Arts in Teaching degree (which requires a total of 36 graduate credits — 40 credits for the dual certification program). Students will complete their Apprenticeship (student) Teaching in their fifth year. Upon completion of the Apprenticeship Teaching, students will have met eligibility requirements for teacher certification and will have at least 23 graduate credits towards the M.A.T. Students may decide to complete the remaining graduate courses leading to an M.A.T. in the fifth year or thereafter or to pursue only graduate-level courses to complete their teaching certification without the master’s degree. (A master’s degree is not required for certification in New Jersey.) A third option would be not to continue in the fifth year in the School of Education.

6. New Jersey teacher certification requires 3 credits in biology, physiology or health. The courses also may be taken to satisfy college core requirements (foundations and disciplinary perspectives) or the liberal arts/science required courses or electives.

7. In order to complete the Master of Arts in Teaching program in five years, students may need to take courses in summer and winter sessions in years three through five, depending upon their particular liberal arts/science program requirements.

8. In addition to required courses at the graduate level for the M.A.T. program, students may choose electives from one area of specialization, i.e., English as a Second Language (ESL), special education (up to 6 credits if not in the dual certification program), instructional technology; or they may choose a variety of electives from

# Combined Degree Programs

B.A. or B.S./M.A.T. QUEST Teacher Preparation

those available. It is recommended that students seeking two certifications focus their graduate electives in a specific area of certification for their second certificate.

## QUEST Program Sequence

(Note: All students follow the course sequence in years one and two and specialize in elementary or secondary education in years three, four and five.) Registration in all courses and any substitutions require the adviser's approval. Sequence may vary depending on adviser's recommendation.

| Year 1  | Credits |
|---|---------|
| EDUC1108  |         |
| Seminar in Professional Practice I: The Teacher's Role in School and Community..... | 3       |
| EDUC2401  |         |
| Field Experience I.....   | 1       |
| Total.....  | 4       |

| Year 2  | Credits |
|---|---------|
| EDUC2209  |         |
| Seminar in Professional Practice II: Teachers as Educational Leaders..... | 3       |
| EDUC2402  |         |
| Field Experience II.....  | 1       |
| EDUC3309  |         |
| Seminar in Professional Practice III: The Functions of Teaching.....      | 3       |
| Total.....  | 7       |

Notes: (1) Graduate-level courses, marked with asterisks (\*), are taken in years three and four in elementary or secondary specializations for dual undergraduate/graduate credit (maximum 15 credits).

(2) Prerequisites for courses in years three and four: EDUC1108 Seminar in Professional Practice I: The Teacher's Role in School and Community, EDUC2209 Seminar in Professional Practice II: Teachers as Educational Leaders, EDUC3309 Seminar in Professional Practice III: The Functions of Teaching, EDUC2401 Field Experience I and EDUC2402 Field Experience II.

(3) Refer to *Graduate Studies Bulletin* for graduate course descriptions.

(4) Basic course sequence in years two, three and four may vary slightly depending upon individual students.

## Elementary Specialization

| Year 3  | Credits |
|---|---------|
| EDUC3403  |         |
| Field Experience III.....                                 | 2       |
| EDUC6818  |         |
| Language Development and Literacy I*.....                 | 3       |
| EDUC6819  |         |
| Language Development and Literacy II*.....                | 3       |
| EDUC6820  |         |
| Problem-based Strategies for Elementary Mathematics*..... | 3       |
| Total.....  | 11      |

| Year 4  | Credits |
|---|---------|
| EDUC3404  |         |
| Field Experience IV: Applied Field Research.....            | 2       |
| EDUC6893  |         |
| Evaluation and Measurement in Education*.....               | 3       |
| EDUC7763  |         |
| Human Relations and Conflict Resolution for Educators*..... | 3       |
| Total.....  | 8       |

| Year 5   | Credits |
|--|---------|
| EDUC6575   |         |
| Apprenticeship Teaching*.....  | 6       |
| EDUC6584   |         |
| Computers as a Teacher's Aid: Curriculum and Instruction*.....           | 3       |
| EDUC6743   |         |
| Introduction to Students with Disabilities in School and Community*..... | 3       |
| EDUC6825   |         |
| Apprenticeship Teaching Seminar*.....                                    | 2       |
| EDUC7812   |         |
| Final Project*.....  | 2       |
| EDUC   |         |
| Approved Electives*.....   | 6       |
| (Elective options are subject to an adviser's approval.)                 |         |
| Total.....   | 22      |

## Secondary Specialization

| Year 3  | Credits |
|---|---------|
| EDUC3403  |         |
| Field Experience III.....                                     | 2       |
| EDUC6562, EDUC6563, EDUC6566, EDUC6568, EDUC6569, EDUC6570    |         |
| Appropriate Methods and Curriculum Courses in Discipline*...3 |         |
| EDUC6651  |         |
| Effective Reading Instruction*.....                           | 3       |
| Total.....  | 8       |

| Year 4   | Credits |
|--|---------|
| EDUC3404   |         |
| Field Experience IV: Applied Field Research.....               | 2       |
| EDUC6584   |         |
| Computers as a Teacher's Aid: Curriculum and Instruction*..... | 3       |
| EDUC6893   |         |
| Evaluation and Measurement in Education*.....                  | 3       |
| EDUC7763   |         |
| Human Relations and Conflict Resolution for Educators*.....    | 3       |
| Total.....   | 11      |

| Year 5   | Credits |
|--|---------|
| EDUC6575   |         |
| Apprenticeship Teaching*.....  | 6       |
| EDUC6743   |         |
| Introduction to Students with Disabilities in School and Community*..... | 3       |
| EDUC6825   |         |
| Apprenticeship Teaching Seminar*.....                                    | 2       |
| EDUC7812   |         |
| Final Project*.....  | 2       |
| (Elective options are subject to an adviser's approval.)                 |         |
| Education-approved Electives*.....                                       | 9       |
| Total.....   | 22      |

Notes: (1) Students who earn their B.A./B.S. degrees at the end of year four are eligible for state teacher certification upon completion of Apprenticeship Teaching and Apprenticeship Teaching Seminar, if all appropriate education prerequisites have been completed (refer to section on certification, pages 62 and 130).

(2) Students are eligible for: the B.A./B.S. degree upon completion of the required 128 credits and the M.A.T. degree upon completion of 36 approved graduate credits.

(3) All candidates starting clinical practice (student teaching) in academic year 2018–2019 or thereafter must complete at least 50 hours of clinical experience (field experience) in a preschool, elementary, middle and/or secondary school setting prior to clinical practice. Clinical practice will occur over a two-semester period within a single school, with at least 175 hours prior to the final, full-time semester of student teaching.

\*Graduate education classes.

\*Graduate education classes.

# Combined Degree Programs

B.A. or B.S./M.A.T. Dual Certification in Elementary and Special Education

## **B.A. or B.S./M.A.T. Dual Certification in Elementary and Special Education**

### **Five-year Program**

The dual certification in elementary and special education is offered by the Peter Sammartino School of Education. The program is offered to students who wish to be certified to teach in elementary and special education. Students will earn a B.A. or B.S. degree in a liberal arts/science major with graduate-level advanced course work toward a Master of Arts in Teaching (M.A.T) degree. See below and pages 206–207 for additional information.

### **Dual Certification Program**

This program is open to students who enter as freshmen beginning September 2013 and thereafter. Because the dual certification courses begin in the freshman year, students may not be able to join this program as upperclassmen. Such cases will be evaluated on an individual basis with the program director. In addition to the academic study listed below, beginning in the first year, the program offers extensive field experiences in select public schools. Faculty advisers work closely with students, individually and/or in groups, to provide guidance as students complete their programs of study. Students admitted to this select program will function as a cohort for their education courses.

The curriculum is designed to offer the option of discontinuing study in education at any time during the first four years without losing any time or credit toward the liberal arts or science baccalaureate degree.

### **Program Outline**

Students must satisfy all college core requirements and specific departmental requirements for their liberal arts/science major in order to be eligible for a B.A. or B.S. degree in their area of specialization.

Students in the QUEST program must major in a liberal arts/science discipline. Students majoring in psychology, humanities or sociology are required to have a minor in a content area (English, history, mathematics or science).

Admissions and matriculation requirements for the QUEST Dual Certification program are the same as for all QUEST programs (see Admissions and Matricula-

tion requirements, page 130). Students interested in the Dual Certification program **must** enter as freshmen or first-semester sophomores.

At the end of four years, students who have met all requirements will be eligible for a B.A. or B.S. degree and will have up to 15 credits toward their Master of Arts in Teaching degree (which requires a total of 40 graduate credits). Typically, students will complete their Apprenticeship (student) Teaching in their fifth year. Upon completion of the Apprenticeship Teaching, students will have met eligibility requirements for teacher certification (general education – first certificate) and will have at least 26 graduate credits toward the M.A.T. Students may decide to complete the remaining graduate courses leading to an M.A.T. in the fifth year or thereafter or to pursue only graduate-level courses to complete their teaching certification without a master's degree. Students must complete the entire program to receive their Teacher of Students with Disabilities (TSD) certification. The state of New Jersey will not issue a TSD certificate as a first certificate. (A master's degree is not required for certification in New Jersey.). A third option would be not to continue in FDU's School of Education.

New Jersey teacher certification requires that 3 credits be taken in biology, physiology or health. These courses also may be taken to satisfy college core requirements or the liberal arts/science required courses or electives.

Eligibility for graduate courses in education in the third and fourth years will require that a student be fully matriculated in the QUEST program. Students must maintain a cumulative grade point ratio (CGPR) of 3.00 and must pass the required basic skills assessment (Praxis CORE Battery) as described on page 130. Students who do not pass all three CORE Battery exams will be restricted in their education classes until these exams are passed.

In order to complete the Dual Certification program in five years, students may need to take courses in summer or winter sessions in years three through five, depending upon their particular liberal arts/science program requirements.

## **Dual Elementary and Special Education Program Sequence**

| <b>Year 1</b>  | Credits             |
|--|---------------------|
| EDUC1108   |                     |
| Seminar in Professional Practice I:<br>The Teacher's Role in School<br>and Community.....  | 3                   |
| EDUC2206   |                     |
| Foundation of Special Education.....   | 3                   |
| EDUC2401   |                     |
| Field Experience I.....  | 1                   |
|  | <b>Total.....7</b>  |
| <br>   |                     |
| <b>Year 2</b>  |                     |
| EDUC2204   |                     |
| Survey of Students with Special<br>Needs.....  | 3                   |
| EDUC2205   |                     |
| Classroom Management.....  | 3                   |
| EDUC2209   |                     |
| Seminar in Professional Practice II:<br>Teachers as Educational Leaders.....   | 3                   |
| EDUC2402   |                     |
| Field Experience II.....   | 1                   |
| EDUC3309   |                     |
| Seminar in Professional Practice III:<br>The Functions of Teaching.....  | 3                   |
|  | <b>Total.....13</b> |
| <br>   |                     |
| Notes: (1) Graduate-level courses, marked with two asterisks (**), are taken in years three and four for dual undergraduate/graduate credit (maximum 15 credits).  |                     |
| (2) Prerequisites for courses in years three and four are EDUC1108 Seminar in Professional Practice I: The Teacher's Role in School and Community, EDUC2401 Filed Experience I, EDUC2402 Field Experience II, EDUC2209 Seminar in Professional Practice II: Teachers as Educational Leaders, EDUC3309 Seminar in Professional Practice Teaching III: The Functions of Teaching and prerequisite special-education courses (EDUC2204 Survey of Students with Special Needs, EDUC2205 Classroom Management and EDUC2206 Foundation of Special Education for dual certification program). |                     |
| (3) Refer to <i>Graduate Studies Bulletin</i> for graduate course descriptions.  |                     |
| <br>   |                     |
| <b>Year 3</b>  |                     |
| EDUC3403   |                     |
| Field Experience III.....  | 2                   |
| EDUC6818   |                     |
| Language Development and<br>Literacy I** .....   | 3                   |

# Combined Degree Programs

B.A. in Communication/M.A. in Media and Professional Communication

|  | Credits      |
|--|--------------|
| EDUC6819   |              |
| Language Development and<br>Literacy II**.....                                       | 3            |
| EDUC7763   |              |
| Human Relations and Conflict<br>Resolution for Educators**.....                      | 3            |
|  | Total.....11 |
| <b>Year 4</b>  |              |
| EDUC3404   |              |
| Field Experience IV: Applied<br>Field Research.....                                  | 3            |
| EDUC6792   |              |
| Assistive Technology for the<br>Inclusive Classroom**.....                           | 3            |
| EDUC6797   |              |
| Multisensory Mathematics<br>Instruction for Students with<br>Disabilities**.....     | 3            |
| EDUC6820   |              |
| Problem-based Strategies for<br>Elementary Mathematics**.....                        | 3            |
| EDUC6893   |              |
| Evaluation and Measurement in<br>Education**.....                                    | 3            |
|  | Total.....15 |
| <b>Year 5</b>  |              |
| EDUC6575   |              |
| Apprenticeship Teaching**.....   | 6            |
| EDUC6747   |              |
| Multisensory Reading Instruction<br>for Students with Reading<br>Disabilities**..... | 3            |
| EDUC6750   |              |
| Teaching in an Inclusive Classroom**....   | 3            |
| EDUC6793   |              |
| Education of Students with<br>Moderate and Severe<br>Disabilities**.....             | 3            |
| EDUC6825   |              |
| Apprenticeship Teaching Seminar**.....   | 2            |
| EDUC7812   |              |
| Final Project**.....   | 2            |
|  | Total.....19 |

Notes: (1) Students who earn their B.A. or B.S. degrees at the end of year four are eligible for state teacher certification upon completion of EDUC6575 Apprenticeship Teaching and EDUC6825 Apprenticeship Teaching Seminar if all appropriate education prerequisites have been completed (refer to section on certification, pages 61–62 and 130–131).

(2) Students are eligible for special education certification upon completion of their B.A. or B.S. degrees and their elementary education certification and completion of the required special education

courses. In New Jersey, special education certification will not be given without an accompanying general education (elementary) certification.

(3) Students are eligible for B.A. or B.S. degree upon completion of the required 128 credits and the M.A.T. degree upon completion of 40 approved graduate credits. Please note that some undergraduate majors such as mathematics, biology and chemistry may require more than 128 credits for the B.A. or B.S.

(4) All candidates starting clinical practice (student teaching) in academic year 2018–2019 or thereafter must complete at least 50 hours of clinical experience (field experience) in a preschool, elementary, middle and/or secondary school setting prior to clinical practice. Clinical practice will occur over a two-semester period within a single school, with at least 175 hours prior to the final, full-time semester of student teaching.

## B.A. in Communication/M.A. in Media and Professional Communication Five-Year Program

The five-year Bachelor of Arts in communication/Master of Arts in media and professional communication is designed for students planning to enter the professional world. The program is designed to help students master the complexities in communicating effectively across all media platforms while increasing their effectiveness in critical thinking.

Students selecting the five-year B.A. in communication/M.A. in media and professional communication are expected to meet the current admission requirements as set forth in the *Graduate Studies Bulletin*. Undergraduate students will be assigned a faculty mentor to guide them through the process.

Communication majors interested in the combined B.A. in communication/M.A. in media and professional communication are eligible to continue in the upper level of the combined program after completing the first 64 credits at the undergraduate level, including at least 9 credits in communication courses, with a minimum grade point ratio of 3.00. Applicants must:

- 1) complete the application form for the M.A. in media and professional communication program during their junior year,
- 2) submit three letters of recommendation,
- 3) submit a writing sample and
- 4) arrange a personal interview with the program director.

Transfer students must have completed a minimum of 60 undergraduate credits in an accredited two-year or four-year college or university, with a minimum of 9 credits in communication studies or equivalent courses. An applicant's academic and work experiences should reflect a strong potential for successfully completing the academic requirements of the five-year B.A./M.A. program.

Upon completion of their senior year, students will have earned a B.A. in communication, in the event they are not accepted or choose not to pursue the five-year program.

# Combined Degree Programs

B.A. in Communication Studies/M.A. in Communication

## **Requirements for the B.A. in Communication/M.A. in Media and Professional Communication**

Students will complete a total of 141 credits: 120 credits for the Bachelor of Arts and 21 additional credits for the Master of Arts; 9 graduate credits will have been completed as part of the 120 credits towards the B.A.

During the seventh and eighth semesters, students should complete COMM6017 Building a Professional Website, COMM6021 Writing Across Media Platforms, COMM6022 Graduate Research Methods and Scholarly Writing, COMM6041 Media Theory, COMM6042 Capstone Experience and COMM6050 Understanding New Media. During the ninth and 10th semesters, students are expected to complete an additional 21 credits of graduate communication electives and 12 electives.

## **Recommended Sequence for the Fourth and Fifth Years**

### **Fourth Year (31 credits) Credits**

#### **7th Semester**

15–18 credits including COMM6021 Writing Across Media Platforms, COMM6041 Media Theory and COMM6050 Understanding New Media...3  
Total.....15–18

#### **8th Semester**

15–18 credits including COMM6017 Building a Professional Website.....3  
COMM6022 Graduate Research Methods and Scholarly Writing.....3  
COMM6042 Capstone Experience.....3  
Graduate Electives.....12  
Total.....15–18

### **Fifth Year (21 credits)**

#### **9th Semester**

Graduate Communication Electives.....9  
Total.....9

#### **10th Semester**

COMM7000 Advanced Special Project.....3  
Graduate Communication Electives.....9  
Total.....12

## **B.A. in Communication Studies/M.A. in Communication Accelerated Program**

The accelerated Bachelor of Arts in communication studies/Master of Arts in communication program, offered by Maxwell Becton College of Arts and Sciences at the Florham Campus, allows students to complete both B.A. and M.A. with a combined degree load that is 9 credits less than that of the separate degrees.

By the start of their junior year, students who are interested in pursuing the five-year B.A. in communication studies/M.A. in communication program must: 1) have completed 64 credits of undergraduate course work including COMM2001 Perspectives on Communication Studies, COMM3018 Mass Communication and COMM3019 Global Communication and 2) have a cumulative grade point ratio of 3.00 or higher.

Transfer students must have completed a minimum of 60 undergraduate credits in an accredited two-year or four-year college or university, with a minimum of 9 credits in communication studies or equivalent courses. An applicant's academic and work experiences should reflect a strong potential for successfully completing the academic requirements of the five-year B.A./M.A. program.

By the end of the junior year, students applying for admission to the five-year B.A. in communication studies/M.A. in communication are expected to submit an application, personal statement, unofficial transcript and two letters of recommendation to the M.A. program director.

Applicants for the accelerated program are interviewed by the director of the graduate program.

Upon completion of their senior year, students will have earned a B.A. in communication studies, in the event they are not accepted or choose not to pursue the accelerated program.

## **Requirements for the B.A. in Communication Studies/M.A. in Communication**

Students will complete a total of 141 credits: 120 credits for the Bachelor of Arts and 21 additional credits for the Master of Arts; 9 graduate credits will have been completed as part of the 120 credits toward the B.A.

## **Required Course Sequence**

### **Senior Year – Undergraduate (9 credits)**

The senior undergraduate year of all B.A./M.A. students is a qualifying year. Students must earn a B grade or better in each of the three required classes in order to qualify for the graduate year. Failure to earn B grades or better in each required class means that the student will not be allowed to continue into the graduate year. Instead, the student will graduate at the end of the senior year with a B.A. in communication studies.

### **Fall of Undergraduate Senior Year Credits**

MCOM6001 Principles and Practices of Communication.....3

### **Spring of Undergraduate Senior Year**

MCOM6005 Group Communication and Leadership.....3  
MCOM6006 Research Methods.....3

### **Graduate Year (21 credits)**

#### **Summer (3 credits)**

MCOM7001 Communication, Culture and Change\* or MCOM Context Course.....3

#### **Fall (9 credits)**

MCOM6002 Professional Writing and Editing.....3  
MCOM6003 Presentation Methods.....3  
MCOM Context Course.....3

#### **Spring (9 credits)**

MCOM6004 Executive Lectures.....3  
MCOM6099 The Capstone Experience: Principles into Practice.....3  
MCOM Context Course.....3

\*Offered at FDU's Wroxtton College, United Kingdom campus.

# Combined Degree Programs

B.A. in Criminal Justice/M.A. in Criminal Justice  
B.A. in History/M.P.A.

## B.A. in Criminal Justice/M.A. in Criminal Justice

The School of Criminal Justice, Political Science and International Studies offers a combined degree program that affords students the opportunity to combine their undergraduate and graduate studies. With the approval of their academic adviser and the program director, students can take up to three designated graduate courses that fulfill the requirements for both undergraduate and graduate degrees, thus accelerating completion of their Master of Arts in criminal justice.

Students opting for the combined degree program must meet the minimum admission requirements for students applying to the graduate program in criminal justice as set forth in the current issue of the *Graduate Studies Bulletin*; the only exception of having obtained their baccalaureate degree.

It is recommended that students interested in the combined degree program declare their candidacy upon successful completion of 64 credits and/or upon entering their junior year; however, no later than having completed 90 undergraduate credits. This affords students the opportunity to collaborate with their adviser in the timely and appropriate selection of undergraduate and graduate courses.

To qualify for the combined program in criminal justice, students must possess and maintain a minimum 3.00 overall cumulative grade point ratio (CGPR), and a 3.25 grade point ratio (GPR) within the criminal justice major. Students in the combined degree program must maintain a minimum 3.00 GPR in the graduate courses for which they have been approved.

## B.A. in History/M.P.A. Five-year Program

The B.A. in history/M.P.A. combined degree is offered on the Metropolitan Campus. A total of 150 credits is normally required to complete the B.A./M.P.A. combined degree program. Thirty-nine of these credits must be earned on the graduate level.

### Requirements for the B.A. in History/M.P.A.

**Undergraduate Courses (A minimum of 120 credits is required for the B.A. degree.)**

#### General Education Requirements (47 credits)

##### College Competencies (21 credits)

##### Written Communication

Six credits in ENWR1101 Academic Writing and ENWR1102 Academic Research and Writing and six credits of writing-intensive courses within the major.

##### Oral Communication

A three-credit course related to public speaking and oral presentations, typically a course in speech.

##### Quantitative Analysis

A three-credit course related to mathematics and statistics, with applications to everyday problems.

##### Ethical and Moral Analysis

A three-credit course that is substantially concerned with ethical theories and questions. For history majors, this course should be HIST2106 Ethical Issues in History.

##### Scientific Analysis

A minimum of six credits of laboratory science.

##### Language and Culture

This requirement can be satisfied by one of four options: traditional language courses with significant cultural elements, language (LANG) courses listed under Language and Culture Studies, language-based study abroad or the six highest ESL/EPS credits for nonnative English speakers.

##### Social and Behavioral Sciences

Six credits of course work in communication, criminal justice, economics, political science, psychology or sociology.

##### Art and Humanities

Six credits of course work in art (visual or performing arts), English literature, history, humanities, philosophy or religion.

### Liberal Arts Distribution (18 credits)

### University Requirements (8 credits)

Credits

|          |                                       |   |
|----------|---------------------------------------|---|
| UNIV1001 | Transitioning to University Life..... | 1 |
| UNIV1002 | Preparing for Professional Life.....  | 1 |
| UNIV2001 | Cross-cultural Perspectives.....      | 3 |
| UNIV2002 | Global Issues.....                    | 3 |

### Major Requirements (36 credits)

At least two 1000-level HIST courses; at least three 3000-level HIST courses; either HIST4400 Senior Research Seminar or HIST4401 Honors History; and as many 2000-level courses as required.

### Minor Elective Courses (15 credits)

### Free Elective Courses (13 credits)

### Additional Graduate Courses Required for the M.P.A. Degree (39 credits)

|          |  |    |
|----------|--|----|
| PADM6600 | Public and Nonprofit Management.....         | 3  |
| PADM6601 | Organization Theory.....                     | 3  |
| PADM6602 | Budgeting and Finance.....                   | 3  |
| PADM6603 | Public Policy Administration.....            | 3  |
| PADM6604 | Human Resources Management.....              | 3  |
| PADM6610 | Quantitative Methods for Administrators..... | 3  |
| PADM6680 | Information Technology Management...3        |    |
| PADM6821 | M.P.A. Project Report.....                   | 3  |
|          | Public Administration Electives.....         | 15 |



# Combined Degree Programs

B.A. in Political Science/M.P.A.

## **B.A. in Political Science/M.P.A. Five-year Program**

This is a five-year B.A./master's curriculum combining undergraduate studies in political science with graduate studies in public administration. It is offered at the Metropolitan Campus, Teaneck, New Jersey. Students will obtain the B.A. at the end of four years of course work and 120 credits. Students can apply to a five-year program (B.A./M.P.A.) as early as their junior year.

A total of 150 credits is normally required to complete the B.A./M.P.A. combined degree program. Thirty-nine of these credits must be earned on the graduate level.

### **Undergraduate Courses (A minimum of 120 credits is required for the B.A. degree.)**

#### **Requirements for the B.A. in Political Science/M.P.A.**

#### **Undergraduate Courses (A minimum of 120 credits is required for the B.A. degree.)**

#### **General Education Requirements (47 credits)**

#### **College Competencies (21 credits)**

#### **Written Communication**

Six credits in ENWR1101 Academic Writing and ENWR1102 Academic Research and Writing and six credits of writing-intensive courses within the major.

#### **Oral Communication**

A three-credit course related to public speaking and oral presentations, typically a course in speech.

#### **Quantitative Analysis**

A three-credit course related to mathematics and statistics, with applications to everyday problems.

#### **Ethical and Moral Analysis**

A three-credit course that is substantially concerned with ethical theories and questions. For political science majors, this course should be POLS2606 Ethics and Politics.

#### **Scientific Analysis**

A minimum of six credits of laboratory science.

#### **Language and Culture**

This requirement can be satisfied by one of four options: traditional language courses with significant cultural elements, language (LANG) courses listed under Language and Culture Studies, language-based study abroad or the six highest ESL/EPS credits for nonnative English speakers.

#### **Social and Behavioral Sciences**

This requirement consists of three credits in political science (POLS1101 Introduction to Political Science) and three credits of course work in communication, criminal justice, economics, political science, psychology or sociology.

#### **Art and Humanities**

Six credits of course work in art (visual or performing arts), English literature, humanities, philosophy or religion.

#### **Liberal Arts Distribution (18 credits)**

#### **University Requirements (8 credits)**

Credits

|          |                                       |   |
|----------|---------------------------------------|---|
| UNIV1001 | Transitioning to University Life..... | 1 |
| UNIV1002 | Preparing for Professional Life.....  | 1 |
| UNIV2001 | Cross-cultural Perspectives.....      | 3 |
| UNIV2002 | Global Issues.....                    | 3 |

#### **Major Requirements (36 credits)**

#### **Required Major Courses (15 credits)**

|          |  |   |
|----------|--|---|
| POLS2231 | Comparative Government and Politics..... | 3 |
| POLS2232 | Political Thought and Theory.....        | 3 |
| POLS2251 | Foreign Policy of the United States..... | 3 |
| POLS2253 | American Government.....                 | 3 |
| POLS4600 | Political Science Seminar                |   |
|          | or                                       |   |
| POLS4875 | Honors in Political Science.....         | 3 |

#### **Major Elective Courses (21 credits)**

A minimum of 21 credits (seven POLS courses).

#### **Minor Elective Courses (15 credits)**

#### **Free Elective Courses (13 credits)**

#### **Additional Graduate Courses Required for the M.P.A. Degree (39 credits)**

Credits

|          |  |    |
|----------|--|----|
| PADM6600 | Public and Nonprofit Management.....         | 3  |
| PADM6601 | Organization Theory.....                     | 3  |
| PADM6602 | Budgeting and Finance.....                   | 3  |
| PADM6603 | Public Policy Administration.....            | 3  |
| PADM6604 | Human Resources Management.....              | 3  |
| PADM6610 | Quantitative Methods for Administrators..... | 3  |
| PADM6680 | Information Technology Management...         | 3  |
| PADM6821 | M.P.A. Project Report.....                   | 3  |
|          | Public Administration Electives.....         | 15 |

#### **M.P.A. Requirements**

For information contact the director of the Public Administration Institute, (201) 692-7176.

# Combined Degree Programs

B.A. in Psychology/M.A. in Forensic Psychology

## Accelerated Programs in Psychology

The University offers separate and distinct accelerated programs for undergraduate psychology majors at its campuses.

At the Metropolitan Campus, Teaneck, New Jersey, the student may earn a master's degree in forensic psychology (see this page), general/theoretical psychology (see page 214) or a master's degree in social work (see page 216). At the Florham Campus, Madison, New Jersey, there is a program leading to a master's degree in industrial/organizational psychology (see page 215).

## B.A. in Psychology/M.A. in Forensic Psychology Five-year Program

The School of Psychology at the Metropolitan Campus, Teaneck, New Jersey, offers three programs that provide an opportunity for students to accelerate their training in psychology. These programs, leading to a master's degree in forensic psychology, general/theoretical psychology or in social work, allow students to complete the typical B.A./M.A. or B.A./M.S.W. course sequence in just five years, rather than the usual six years of full-time study.

### Entrance and Curriculum Requirements for the B.A./M.A. in Forensic Psychology Program

Students can enter the program as incoming freshmen or as students already enrolled in an undergraduate program at Fairleigh Dickinson University (or as incoming transfer students). Current undergraduate students must first complete a minimum of 12 credits in psychology (including statistics). Students' academic and work experiences must reflect a strong potential for successfully completing the academic requirements of the accelerated B.A./M.A. program. Academic potential for either incoming freshmen or current undergraduate students will be determined by the School of Psychology on the basis of the following: 1) SAT scores (for high school students); 2) academic transcripts; 3) a minimum of two letters of recommendation (at least one from a professor/teacher); 4) a personal statement regarding academic and career goals; and 5) for current undergraduate students, a cumulative grade point ratio (GPR) of 3.50. The decision to accept applicants will be made on the basis of the foregoing data and a personal interview.

Students begin taking graduate classes in their junior year and remain on "probationary" status until their senior year, when they are officially accepted into the program. This evaluation will be performed by a committee of psychology faculty at the end of each student's fourth year. With regard to credits earned in graduate courses, students are required to maintain a minimum overall grade point ratio of 3.00 and must not earn more than one C-level grade throughout their graduate course work. Students receiving two or more grades below a B- in graduate courses will not be permitted to continue in the

program. Students in this circumstance who are not permitted to continue in the graduate program will receive the B.A. in psychology upon successful completion of their undergraduate curriculum (a total of 120 credits).

A written comprehensive examination of the candidate's knowledge of general psychology or a master's thesis is required at the end of the graduate component of program. The comprehensive examination may be taken only twice. Failure to pass the comprehensive examination may result in dismissal from the program.

### Outline of the Psychology Components of the B.A./M.A. Accelerated Program in Forensic Psychology

#### Psychology (undergraduate) 30 credits

|  |                                       |   |
|--|---------------------------------------|---|
| CRIM1101                                 | Introduction to Criminal Justice..... | 3 |
| CRIM2204                                 | Juvenile Justice and Delinquency..... | 3 |
| PSYC1103                                 | General Psychology.....               | 3 |
| PSYC2201                                 | Statistics.....                       | 3 |
| PSYC2204                                 | Child Development.....                | 3 |
| PSYC3202                                 | Experimental Psychology.....          | 3 |
| PSYC4500                                 | Senior Seminar in Psychology.....     | 3 |
| Field Placement, Independent             | Study or Co-op in Psychology.....     | 3 |
| Psychology or Criminal Justice Elective* | Psychology Elective.....              | 3 |

#### Psychology (graduate) 36 credits

|          |  |   |
|----------|--|---|
| PSYC6111 | Theories of Personality.....               | 3 |
| PSYC6114 | Psychopathology.....                       | 3 |
| PSYC6121 | Statistics and Research Methods.....       | 3 |
| PSYC6130 | Interviewing Techniques.....               | 3 |
| PSYC6227 | Clinical Practice in Forensic Context..... | 3 |
| PSYC6230 | Introduction to Forensic Psychology.....   | 3 |

\*Psychology/criminal justice elective is satisfied by completion of an approved forensic course. If course was taken at the undergraduate level, the graduate-level course must be substituted by an approved graduate course.

# Combined Degree Programs

B.A. in Psychology/M.A. in General/Theoretical Psychology

|   | Credits |
|---|---------|
| PSYC6231<br>Psychological Bases of Criminal<br>Behavior.....          | 3       |
| PSYC7125<br>Applied Social Psychology.....                            | 3       |
| PSYC7230<br>Forensic Assessment and Prediction.....                   | 3       |
| PSYC7234<br>Ethical Issues in Forensic Practice.....                  | 3       |
| PSYC7235<br>Evaluating Criminal Responsibility<br>and Competency..... | 3       |
| PSYC7240<br>Externship in Forensic Psychology.....                    | 3       |

## **B.A. in Psychology/M.A. in General/Theoretical Psychology** **Five-year Program**

The School of Psychology at the Metropolitan Campus, Teaneck, New Jersey, offers three programs that provide an opportunity for students to accelerate their training in psychology. These programs, leading to a master's degree in forensic psychology, general/theoretical psychology or in social work, may allow students to complete the typical B.A./M.A. or B.A./M.S.W. course sequence in just five years, rather than the usual six years of full-time study.

### **Entrance and Curriculum Requirements for the B.A./M.A. in General/Theoretical Psychology Program**

Students can enter the program as incoming freshmen or as students already enrolled in an undergraduate program at Fairleigh Dickinson University (or as incoming transfer students). Current undergraduate students must first complete a minimum of 12 credits in psychology. Students' academic and work experiences should reflect a strong potential for successfully completing the academic requirements of the accelerated B.A./M.A. program. Academic potential for either incoming freshmen or current undergraduate students will be determined by the School of Psychology on the basis of the following: 1) SAT scores; 2) academic transcripts; 3) a minimum of two letters of recommendation; and 4) a personal statement regarding academic and career goals. The decision to accept applicants will be made on the basis of the foregoing data and a personal interview.

Students will be allowed to continue in the graduate component of the five-year degree program upon evaluation of their performance in the undergraduate component of the program; this evaluation will be performed by a committee of psychology faculty at the end of each student's fourth year. With regard to credits earned in graduate courses, students are required to maintain a minimum overall grade point ratio of 2.75 and must not earn more than two C-level grades throughout their graduate course work. Students receiving two or more grades below a B- in core courses will not be permitted to continue in the program. Students in this circumstance who are not permitted to continue in the graduate program will receive the B.A. in psychology upon successful completion of their undergraduate curriculum (a total of 120 credits).

A written comprehensive examination of the candidate's knowledge of general psychology or a master's thesis is required at the end of the graduate component of the program. The comprehensive examination may be taken only twice. Failure to pass the comprehensive examination will result in dismissal from the program.

### **Outline of the Psychology Components of the B.A./M.A. Program in General/Theoretical Psychology**

#### **Psychology (undergraduate) 30 credits**

|   |   |
|---|---|
| PSYC1103<br>General Psychology.....           | 3 |
| PSYC2201<br>Statistics.....                   | 3 |
| PSYC2204<br>Child Development.....            | 3 |
| PSYC2234<br>Social Psychology.....            | 3 |
| PSYC3202<br>Experimental Psychology.....      | 3 |
| PSYC3315<br>Abnormal Psychology.....          | 3 |
| PSYC4500<br>Senior Seminar in Psychology..... | 3 |
| Psychology Electives.....                     | 9 |

#### **Psychology (graduate) 36 credits**

##### **Core Courses (6 credits)**

|  |   |
|--|---|
| PSYC6121<br>Statistics and Research Methods.....       | 3 |
| PSYC6129<br>Research Methods and<br>Psychometrics..... | 3 |

##### **Choose Five Courses From Below (15 credits)**

|   |   |
|---|---|
| PSYC6109<br>Social Psychological Applications.....                      | 3 |
| PSYC6111<br>Theories of Personality.....                                | 3 |
| PSYC6114<br>Psychopathology.....  | 3 |
| PSYC6128<br>Computer Applications and<br>Scientific Report Writing..... | 3 |
| PSYC7122<br>Developmental Psychology.....                               | 3 |
| PSYC7133<br>Learning, Cognition and Emotion.....                        | 3 |
| PSYC7130<br>Biological Bases of Behavior.....                           | 3 |

##### **Five Psychology Elective Courses (15 credits)**

|  |    |
|--|----|
| PSYC<br>Graduate Psychology Electives..... | 15 |
|--|----|

# Combined Degree Programs

B.A. in Psychology/M.A. in Industrial/Organizational Psychology

## B.A. in Psychology/M.A. in Industrial/Organizational Psychology

### Five-year Program

The University offers separate and distinct accelerated programs for undergraduate psychology majors at its campuses.

At the Florham Campus, Madison, New Jersey, there is a program leading to a master's degree in industrial/organizational psychology (see this page).

The department of psychology and counseling at the Florham Campus, Madison, New Jersey, has a program designed to provide an opportunity for students to accelerate their training in psychology. This program, leading to a master's degree in industrial/organizational psychology, allows students to complete the typical B.A./M.A. course sequence in five years, rather than the usual six years, of full-time study.

### Entrance and Curriculum Requirements

To apply, students must have completed a minimum of 60 undergraduate credits in an accredited two-year or four-year college or university, with a minimum of 9 credits in psychology. Courses in statistics and industrial psychology must be completed before applying. If students are transferring to the University, they must complete at least 12 credits at Fairleigh Dickinson University before they can apply to the accelerated program. Students' academic and work experiences should reflect a strong potential for successfully completing the academic requirements of the accelerated B.A./M.A. program. Academic potential will be determined by the graduate Admissions Committee of the department of psychology and counseling on the basis of the following: 1) completed application (available in the department), 2) academic transcripts, 3) a minimum of three letters of recommendation, 4) a résumé indicating prior work and life experience, 5) a personal statement regarding academic and career goals and 6) a personal interview. The decision to accept applicants will be made on the basis of the foregoing data.

### Requirements for Successful Completion of Graduate Component of Accelerated Degree Programs

Students will be allowed to continue in the graduate component of the accelerated degree programs upon evaluation of

performance in the undergraduate and graduate components of their particular programs. This evaluation will be performed by a committee of psychology faculty at the end of the students' fourth year. With regard to credits earned in graduate courses, students are required to maintain an overall grade point ratio of 3.00 and must not earn more than one C-level grade throughout graduate course work. Students in this circumstance who are not permitted to continue in the graduate program will receive the B.A. in psychology upon successful completion of their undergraduate curriculum (a total of 120 credits).

A written comprehensive examination of the candidate's knowledge of general psychology as well as his or her field of specialization is required at the end of these graduate psychology programs. Students are eligible to take this exam during the final semester in which they are enrolled in their graduate courses. The comprehensive examination may be taken only twice. Failure to pass the comprehensive examination will result in dismissal from the graduate program.

### Industrial/Organizational Psychology

The specialization in industrial/organizational psychology is designed to equip the graduate with a working knowledge of practices and procedures in applying psychology in a variety of organizational settings. Accordingly, the emphasis is on those aspects of industrial/organizational psychology that are most immediately useful to the student in a working environment.

### Specific Course Requirements for Industrial/Organizational Psychology

Students who complete the combined B.A. and M.A. program must meet all requirements in the following areas: 1) arts and sciences core (48–50 credits); 2) free electives (28–31 credits); 3) psychology, undergraduate, core and electives (26–27 credits); and 4) psychology, graduate, core and electives (36 credits). It is expected that many of the courses in the arts and sciences core and free electives will have been completed by the time students have accumulated the minimum of 60 undergraduate credits needed for admission to the program. Most of the psychology courses, undergraduate and graduate, would be taken in the last three years of the program, with the final year devoted exclusively to graduate courses.

### Outline of the Psychology Components of the B.A./M.A. Program in Industrial/Organizational Psychology

**Psychology (undergraduate) 26 credits**  
Credits

|  |   |   |
|--|---|---|
| PSYC1201   | General Psychology.....                     | 3 |
| PSYC2210   | Psychological Statistics .....              | 4 |
| PSYC2211   | Research Methods .....                      | 4 |
| PSYC3005   | Abnormal Psychology.....                    | 3 |
| PSYC3510   | Social Psychology.....                      | 3 |
| PSYC3322   | Industrial Psychology.....                  | 3 |
| PSYC4291   | History and Systems of Psychology.....      | 3 |
| Experimental Elective (to be selected from PSYC3032 Psychological Psychology, PSYC3331 Theories of Learning, PSYC3333 Sensation and Perception, PSYC4130 Behavioral Neuroscience Methods).....               |   | 3 |
| The next group of courses are graduate courses for which students would be given dual credit toward their B.A. and M.A. requirements. These courses would be taken during the third, fourth and fifth years. |   |   |
| COUN7706   | Lifestyle and Career Counseling.....        | 3 |
| PSYC6300   | Psychological Statistics .....              | 3 |
| PSYC6301   | Group Dynamics and Team Leadership.....     | 3 |
| PSYC6302   | Organizational Psychology.....              | 3 |
| PSYC6303   | Research Methods and Design.....            | 3 |
| PSYC6304   | Personnel Selection.....                    | 3 |
| PSYC6305   | Psychometrics.....                          | 3 |
| PSYC6306   | Behavioral Consulting in Organizations..... | 3 |
| PSYC6308   | Human Resources Development.....            | 3 |
| PSYC7700   | Industrial/Organizational Internship.....   | 3 |
| <b>Graduate Thesis or Electives 6 credits</b>  |   |   |
| PSYC7803, PSYC7804   | Research and Thesis.....                    | 6 |
| or   |   |   |
| PSYC6307   | Techniques of Interviewing.....             | 3 |
| PSYC7745   | Leadership Studies.....                     | 3 |

# Combined Degree Programs

B.A. in Psychology/M.S.W.

## **B.A. in Psychology/M.S.W. Five-year Program**

The School of Psychology at the Metropolitan Campus, Teaneck, New Jersey, offers three programs that provide an opportunity for students to accelerate their training in psychology. These programs, leading to a master's degree in forensic psychology, general/theoretical psychology or in social work, allow students to complete the typical B.A./M.A. or B.A./M.S.W. course sequence in just five years, rather than the usual six years of full-time study.

### **Entrance and Curriculum Requirements for the B.A./M.S.W. Program**

This program is offered in cooperation with the Rockland Branch Campus of the New York University (NYU) Silver School of Social Work, located in Sparkill, N.Y. Students earn their B.A. in psychology from Fairleigh Dickinson University and their Master of Social Work (M.S.W.) from NYU. Students can enter this program as incoming freshmen or as students already enrolled in an undergraduate program at Fairleigh Dickinson University (or as incoming transfer students). Students' academic and work experiences should reflect a strong potential for successfully completing the academic requirements of the B.A./M.S.W. program. Academic potential for either incoming freshmen or current undergraduate students will be determined by the School of Psychology on the basis of the following: 1) SAT scores; 2) academic transcripts; 3) a minimum of two letters of recommendation; and 4) a personal statement regarding academic and career goals. Admission to this program is on the basis of the foregoing data and a personal interview. Current undergraduate students can apply for admission to this program only after completing 64 credits of undergraduate course work, including no less than 18 credits in psychology. In addition, current undergraduate students must have a cumulative grade point ratio (CGPR) of at least 3.00 and a psychology grade point ratio of at least 3.25 in order to be considered for admission to this program (and to maintain matriculation in this program).

Students will be allowed to continue in the graduate portion of this five-year degree program at the Rockland Branch Campus of the NYU Silver School of Social Work upon evaluation of their

performance in the undergraduate portion of the program at FDU; this evaluation will be performed by a committee of psychology faculty from FDU and NYU in the middle of each student's fourth year.

Concerning graduate course work, students will be required to maintain at least a B average with a grade of B or better in each course. Students who fail to maintain at least a B average or better in their graduate course work or who receive a grade below a B in any graduate course may be terminated from the graduate portion of the program. In such cases, students will receive the B.A. in psychology from FDU upon successful completion of their undergraduate curriculum (a total of 120 credits), including up to 13 credits taken at NYU.

### **Outline of the Psychology/Social Work Components of the B.A./M.S.W. Program**

| <b>Psychology and Sociology (undergraduate)</b> | <b>39 credits</b> |
|---|-------------------|
|   | <b>Credits</b>    |
| PSYC1103  |                   |
| General Psychology.....                         | 3                 |
| PSYC2201  |                   |
| Statistics.....                                 | 3                 |
| PSYC2204  |                   |
| Child Development.....                          | 3                 |
| PSYC2234  |                   |
| Social Psychology.....                          | 3                 |
| PSYC3202  |                   |
| Experimental Psychology.....                    | 3                 |
| PSYC3315  |                   |
| Abnormal Psychology.....                        | 3                 |
| PSYC3384  |                   |
| Theories of Personality.....                    | 3                 |
| PSYC4500  |                   |
| Senior Seminar in Psychology.....               | 3                 |

### **Clinical Social Work Track Courses**

|   |   |
|---|---|
| PSYC4391                                  |   |
| Techniques of Psychotherapy.....          | 3 |
| SOCI2115                                  |   |
| Introduction to Social Work.....          | 3 |
| SOCI3316                                  |   |
| The Family: Stability and Dysfunction...  | 3 |
| SOCI3318                                  |   |
| Health and Society: Access and Issues.... | 3 |
| SOCI3415                                  |   |
| Internship in Social Work.....            | 3 |

### **New York University Graduate Courses (65 credits)**

|  | <b>Credits</b> |
|--|----------------|
| Social Welfare Programs and Policies I.....  | 3              |
| Social Welfare Programs and Policies II..... | 3              |
| Human Behavior in the Social                 |                |
| Environment I.....                           | 3              |
| Human Behavior in the Social                 |                |
| Environment II.....                          | 3              |
| Human Behavior in the Social                 |                |
| Environment III.....                         | 3              |
| Ethnocultural Issues in Social Work          |                |
| Practice I.....                              | 3              |
| Social Work Research I or Elective.....      | 3              |
| Social Work Research II.....                 | 3              |
| Social Work Practice I.....                  | 4              |
| Social Work Practice II.....                 | 3              |
| Clinical Practice with Groups.....           | 3              |
| Clinical Practice with Individuals           |                |
| and Families.....                            | 3              |
| Field Placement I.....                       | 4              |
| Field Placement II.....                      | 4              |
| Field Placement III.....                     | 4              |
| Field Placement IV.....                      | 4              |
| Integrative Practice Seminar.....            | 3              |
| Electives.....                               | 9              |

# Combined Degree Programs

B.A. in Sports Administration/Master of Sports Administration

## B.A. in Sports Administration/ Master of Sports Administration

### Five-year Program

The five-year program allows qualified students to attain a Bachelor of Arts degree in sports administration and a Master of Sports Administration.

Students in the combined B.A. in sports administration/M.S.A. program must have achieved at least a 3.00 cumulative grade point ratio by the conclusion of their junior year.

### Requirements

#### First Year

##### 1st Semester

|   | Credits |
|---|---------|
| COMM2099                                  |         |
| Professional Communications.....          | 3       |
| ENGL1101                                  |         |
| English Composition I                     |         |
| or  |         |
| ENGL1111                                  |         |
| Literature and Composition I.....         | 3       |
| INTER1009                                 |         |
| Perspectives on the Individual.....       | 3       |
| SPAD2004                                  |         |
| Introduction to Sports Administration...3 |         |
| SUST1000                                  |         |
| Introduction to Sustainability.....       | 3       |
| UNIV1001                                  |         |
| Transitioning to University Life.....     | 1       |
| Total.....                                | 16      |

##### 2nd Semester

|                                      |    |
|--------------------------------------|----|
| ART1101                              |    |
| Art Appreciation.....                | 3  |
| ENGL1102                             |    |
| English Composition II               |    |
| or                                   |    |
| ENGL1112                             |    |
| Literature and Composition II.....   | 3  |
| MATH1141                             |    |
| Introduction to Mathematical         |    |
| Methods.....                         | 3  |
| MIS2101                              |    |
| Management Information System.....   | 3  |
| SPAD (choose from Section B*).....   | 3  |
| UNIV1002                             |    |
| Preparing for Professional Life..... | 1  |
| Total.....                           | 16 |

#### Second Year

##### 3rd Semester

|                                    | Credits |
|------------------------------------|---------|
| ECON1121                           |         |
| Macroeconomics.....                | 3       |
| INTER2013                          |         |
| The American Experience.....       | 3       |
| INTER2101                          |         |
| Globalization: Nature, Causes and  |         |
| Consequences.....                  | 3       |
| SPAD (choose from Section B*)..... | 3       |
| UNIV2001                           |         |
| Cross-cultural Perspectives.....   | 3       |
| Total.....                         | 15      |

##### 4th Semester

|  |    |
|--|----|
| ECON1122                               |    |
| Microeconomics.....                    | 3  |
| INTER2008                              |    |
| Literature and Culture Seminar         |    |
| or                                     |    |
| Foreign Language Course**.....         | 3  |
| SPAD4000                               |    |
| International Sports Administration*** |    |
| or                                     |    |
| SPAD (choose from Section B*).....     | 3  |
| SPAD (choose from Section C****).....  | 3  |
| UNIV2002                               |    |
| Global Issues.....                     | 3  |
| Total.....                             | 15 |

#### Third Year

##### 5th Semester

|   |    |
|---|----|
| ENGW3006                                |    |
| Persuasive Writing.....                 | 3  |
| INTER1007                               |    |
| Gender and Identity                     |    |
| or                                      |    |
| INTER2007                               |    |
| Language, Logic and Culture Seminar...3 |    |
| PHYS1126                                |    |
| Earth Physics (Lecture and              |    |
| Laboratory).....                        | 3  |
| SPAD (choose from Section B*).....      | 3  |
| SPAD (choose from Section C****).....   | 3  |
| Total.....                              | 15 |

##### 6th Semester

|                                       |    |
|---------------------------------------|----|
| SPAD2018                              |    |
| Sports Internship.....                | 3  |
| SPAD3010                              |    |
| Job-search Strategies.....            | 1  |
| SPAD (choose from Section B*).....    | 3  |
| SPAD (choose from Section C****)..... | 6  |
| Total.....                            | 13 |

\*See Section B page 218.

\*\*Florham Campus students must take a language class (i.e., Spanish, French, German, Italian, Japanese and sign language, etc.).

\*\*\*Offered every two years.

\*\*\*\*See Section C page 218.

#### Fourth Year

##### 7th Semester

|                                    |    |
|------------------------------------|----|
| INTER4438                          |    |
| Ethics and Public Affairs.....     | 3  |
| MSA6701                            |    |
| Legal Issues in the Domestic and   |    |
| International Sports Industry..... | 3  |
| MSA6702                            |    |
| Sports Administration Research     |    |
| and Policy Analysis.....           | 3  |
| MSA6704                            |    |
| Internship I or Individual         |    |
| Job-related Project.....           | 3  |
| SPAD (choose from Section C*)..... | 3  |
| Total.....                         | 15 |

##### 8th Semester

|                                       |    |
|---------------------------------------|----|
| MSA6603                               |    |
| Sports Marketing and Promotions.....  | 3  |
| MSA6614                               |    |
| Assessing Human Performance.....      | 3  |
| MSA6636                               |    |
| Internship II.....                    | 3  |
| SPAD4000                              |    |
| International Sports Administration** |    |
| or                                    |    |
| SPAD (choose from Section B***)...... | 3  |
| Elective.....                         | 3  |
| Total.....                            | 15 |

#### Fifth Year

##### 9th Semester

|   |   |
|---|---|
| MSA6604                                 |   |
| Sports in a Social Context.....         | 3 |
| MSA6607                                 |   |
| Human Resource Administration           |   |
| in Sports Organizations.....            | 3 |
| MSA6703                                 |   |
| Financial Administration in Sports..... | 3 |
| Total.....                              | 9 |

##### 10th Semester

|  |   |
|--|---|
| MSA6609                                |   |
| Communications and Media Relations...3 |   |
| MSA6610                                |   |
| Strategies in Fundraising and          |   |
| Development.....                       | 3 |
| MSA6705                                |   |
| Strategic Planning, Implementation     |   |
| and Evaluation.....                    | 3 |
| Total.....                             | 9 |

\*See Section C page 218.

\*\*Offered every two years.

\*\*\*See Section B page 218.

\*See Section B page 218.

# Combined Degree Programs

B.S. in Accounting/M.S. in Accounting

## Section B

24 credits must be completed:

|          |  |
|----------|--|
| SPAD2004 | Introduction to Sports Administration      |
| SPAD2010 | Legal Aspects in Sports Administration     |
| SPAD2014 | Ethical Issues in Sports                   |
| SPAD2015 | Team Development                           |
| SPAD2017 | Safety, First Aid and Prevention of Injury |
| SPAD2019 | Sports, Marketing, Public Relations        |
| SPAD2020 | Fundraising in Sports                      |
| SPAD2022 | Facility Management                        |
| SPAD3000 | Fiscal Concept in Sports                   |
| SPAD4001 | Sports Internship II                       |
| SPAD4500 | Coaching Certification                     |

## Section C

30 credits must be completed:

|           |   |
|-----------|---|
| ACCT1131  | Accounting I  |
| ACCT1132  | Accounting II   |
| INTER2023 | Design and Culture Workshop I                         |
| INTER2107 | Real World Statistics                                 |
| INTER4000 | Introduction to Interdisciplinary Research            |
| MIS2110   | New Perspectives on the Internet                      |
| MIS2191   | Digital Design for Business                           |
| SPAD2012  | Nutrition and Wellness                                |
| SPAD2016  | Stress Management                                     |
| SPAD2021  | Strength and Conditioning                             |
| SPAD2025  | Global Perspectives in Sports                         |
| SPAD2030  | Ultimate Sports Marketing                             |
| SPAD2033  | Exercise Physiology                                   |
| SPAD3001  | Theory, Philosophy and Principles of Coaching         |
| SPAD3002  | Human Kinesiology                                     |
| SPAD3003  | Sports and Society                                    |
| SPAD3004  | Youth Program Administration                          |
| SPAD3005  | Management in Athletic Training, Athletics and Health |

## B.S. in Accounting/ M.S. in Accounting Five-year Program (4+1)

Fairleigh Dickinson University now offers a comprehensive 150-hour program (4+1) leading to the combined Bachelor of Science/Master of Science in accounting degree. This cutting-edge program features state-of-the-art studies in accounting, taxation and law designed to prepare the student for employment in either the public or private accounting sector.

### Entrance and Curriculum Requirements for the B.S./M.S. Program

The B.S./M.S. in accounting program is open to any accounting major admitted to the University. After completing the first 75 credits at the undergraduate level, first semester junior year students are eligible to join the 4+1 in the upper level of the 150-hour B.S./M.S. program if they comply with the requirements for the M.B.A. program.

A personal interview with the director of the program also may be required.

Acceptance into the program takes place in the fifth semester of the undergraduate program. Students will complete the following curriculum requirements, beginning with the sixth semester. During the spring semester following the completion of the undergraduate portion of the program, students commence the graduate portion of the program, which will be completed during the following fall semester.

Admission requirements for the graduate portion of this program apply.

### Components of the B.S./M.S. Program in Accounting

| 9th Semester                             | Credits |
|--|---------|
| ACCT6606                                 |         |
| Federal Tax II: Business Entities* ..... | 3       |
| ACCT6680                                 |         |
| Selected Accounting Topics* .....        | 3       |
| LAW6657                                  |         |
| Applied Business Law* .....              | 3       |
| Graduate Accounting Elective* .....      | 3       |
| Graduate Business Elective* .....        | 3       |
| Total.....                               | 15      |

| 10th Semester  | Credits |
|--|---------|
| ACCT6682   |         |
| Advanced Auditing* .....                             | 3       |
| ACCT6690   |         |
| Seminar: Accounting and Auditing Case Studies* ..... | 3       |
| Graduate Tax/Finance/Accounting Elective* .....      | 3       |
| Graduate Business Electives* .....                   | 6       |
| Total.....   | 15      |

\*Designates graduate-level course.

\*Designates graduate-level course.

# Combined Degree Programs

B.S. in Accounting/M.B.A. or M.S. in Supply Chain Management or M.S. in Taxation  
B.S. in Biochemistry/M.S. in Applied Clinical Nutrition

## **B.S. in Accounting/M.B.A. or M.S. in Supply Chain Management or M.S. in Taxation**

### **Five-year Programs (4+1)**

Fairleigh Dickinson University also offers three five-year combined degree programs (4+1): B.S. in accounting/M.B.A., B.S. in accounting/M.S. in supply chain management and B.S. in accounting/M.S. in taxation. For information contact Janette Shurdom, assistant dean for undergraduate programs and student services, Silberman College of Business, at 201-692-7206 or shurdom@fd.edu.

Admission requirements for the graduate portion of this program apply.

## **B.S. in Biochemistry/M.S. in Applied Clinical Nutrition**

### **Five-year Program**

*(with School of Applied Clinical Nutrition, New York Chiropractic College)*

This accelerated, combined degree program provides qualified students the opportunity to complete the bachelor's degree and a master's degree in five years, one year less than the normal span of six years. The bachelor's degree (B.S. in biochemistry) is awarded by Fairleigh Dickinson University and the master's degree (M.S.) is offered online by the School of Applied Clinical Nutrition of the New York Chiropractic College (NYCCACN) in Seneca Falls, N.Y.

The NYCCACN comprehensive professional education focuses on nutrition and its application in prevention and disease management, preparing graduates to practice in a wide range of clinical, consulting and industry settings. The program emphasizes an integrative approach to health care ([www.nycc.edu/AcademicPrograms\\_MSACNprogram.htm](http://www.nycc.edu/AcademicPrograms_MSACNprogram.htm)).

Students are admitted at FDU as incoming freshmen or qualified transfer students. They may apply for the B.S. degree upon successful completion of six semesters at FDU, including the courses listed on pages 225–227, and the first three trimesters at NYCCACN. A maximum of 32 credits from NYCCACN may be transferred toward completion of the B.S. degree at FDU.

### **Admission to the Combined Degree Program**

High school seniors with a combined SAT score of 1150 (at least 600 math and 550 verbal) or 25 on ACT and higher and ranking in the top 25 percent of their class or qualified students who have completed their first year of college study with a grade point ratio of 3.00 or higher may apply for admission to the combined degree program.

After a preliminary screening of the applications by the FDU Office of Admissions, qualified applicants will be invited to sit for an interview with the FDU/NYCCACN Joint Admissions Committee. Recommendation from the preprofessional adviser is required.

### **Combined Degree Program Requirements**

While enrolled at FDU, students are required to follow the accelerated preprofessional curriculum in biochemistry and are expected to maintain a minimum cumulative grade point ratio of 3.00 or higher in all course work and a minimum of C in all science courses.

### **Qualifying for Enrollment at School of Applied Clinical Nutrition of New York Chiropractic College (NYCCACN)**

Qualified students enrolled in the combined degree program will be guaranteed a seat at NYCCACN for training in applied clinical nutrition. To qualify, students must meet the following criteria:

- Completion of all FDU curriculum requirements, including the general education requirements and the degree program requirements for the major and all prerequisite courses required for admission at NYCCACN. Students need to obtain a grade of C or higher in science and math courses;
- A grade point ratio of 3.00 or higher;
- Students currently enrolled at FDU who seek admission to the combined degree program must apply to the School of Natural Sciences, University College: Arts • Sciences • Professional Studies, Metropolitan Campus, Teaneck, N.J., prior to the completion of 60 credit hours at FDU or at least one year before the anticipated date of matriculation at NYCCACN; and
- Students enrolled in the combined degree program who decide to complete the B.S. degree at FDU prior to entering NYCCACN must make this known to their school director or department chair prior to the completion of 60 credits at FDU or at least one year before the anticipated date of matriculation at NYCCACN.

### **Prenutrition Curriculum**

Under the provisions of the prenutrition program, students matriculate in the School of Natural Sciences of University College: Arts • Sciences • Professional Studies for a minimum of 98 credits of course work leading to the B.S. in biochemistry (preprofessional option). The curriculum is as follows:



# Combined Degree Programs

B.S. in Biochemistry/M.S. in Chemistry with Pharmaceutical Chemistry Concentration

| <b>1st Semester</b>                             | Credits   |
|---|-----------|
| BIOL1251, BIOL1253                              |           |
| General Biology I (Lecture and Laboratory)..... | 4         |
| CHEM1201  |           |
| General Chemistry I.....                        | 3         |
| CHEM1203  |           |
| General Chemistry Laboratory I.....             | 1         |
| ENWR1101  |           |
| Academic Writing.....                           | 3         |
| MATH1201  |           |
| Calculus I.....                                 | 4         |
| UNIV1001  |           |
| Transitioning to University Life.....           | 1         |
| <b>Total.....</b>                               | <b>16</b> |

| <b>2nd Semester</b>                              | Credits   |
|--|-----------|
| BIOL1252, BIOL1254                               |           |
| General Biology II (Lecture and Laboratory)..... | 4         |
| CHEM1202   |           |
| General Chemistry II.....                        | 3         |
| CHEM1204   |           |
| General Chemistry Laboratory II.....             | 1         |
| ENWR1102   |           |
| Academic Research and Writing.....               | 3         |
| MATH2202   |           |
| Calculus II.....                                 | 4         |
| UNIV1002   |           |
| Preparing for Professional Life.....             | 1         |
| <b>Total.....</b>                                | <b>16</b> |

| <b>3rd Semester</b>                     | Credits   |
|---|-----------|
| CHEM2261                                |           |
| Organic Chemistry I.....                | 3         |
| CHEM2263                                |           |
| Organic Chemistry Laboratory I.....     | 2         |
| ENGL2201                                |           |
| Masterpieces of World Literature I..... | 3         |
| PHYS2201                                |           |
| Physics Laboratory I.....               | 1         |
| PHYS2203                                |           |
| University Physics I.....               | 3         |
| UNIV2001                                |           |
| Cross-cultural Perspectives.....        | 3         |
| <b>Total.....</b>                       | <b>15</b> |

| <b>4th Semester</b>                      | Credits   |
|--|-----------|
| CHEM2262                                 |           |
| Organic Chemistry II.....                | 3         |
| CHEM2264                                 |           |
| Organic Chemistry Laboratory II.....     | 2         |
| ENGL2202                                 |           |
| Masterpieces of World Literature II..... | 3         |
| PHYS2202                                 |           |
| Physics Laboratory II.....               | 1         |
| PHYS2204                                 |           |
| University Physics II.....               | 3         |
| UNIV2002                                 |           |
| Global Issues.....                       | 3         |
| <b>Total.....</b>                        | <b>15</b> |

| <b>5th Semester</b>                       | Credits   |
|---|-----------|
| CHEM3241                                  |           |
| Physical Chemistry I.....                 | 3         |
| CHEM3243                                  |           |
| Physical Chemistry Laboratory I.....      | 2         |
| CHEM3281                                  |           |
| Biochemistry I.....                       | 3         |
| Advanced Mathematics Course*.....         | 3         |
| Humanities/Social Science Elective**..... | 3         |
| <b>Total.....</b>                         | <b>14</b> |

| <b>6th Semester</b>                       | Credits   |
|---|-----------|
| BIOL6733                                  |           |
| Enzymology.....                           | 3         |
| CHEM3242                                  |           |
| Physical Chemistry II***.....             | 3         |
| CHEM3244                                  |           |
| Physical Chemistry Laboratory II****..... | 2         |
| Concentration Electives.....              | 6         |
| <b>Total.....</b>                         | <b>14</b> |

\*MATH2203 Calculus III or MATH2337 Applied Statistics I.

\*\*May be courses in social science, history, philosophy, literature or foreign language.

\*\*\*May be replaced by CHEM3251 Analytical Chemistry.

\*\*\*\*May be replaced by CHEM4234 Instrumental Analysis Laboratory.

## B.S. in Biochemistry/ M.S. in Chemistry with Pharmaceutical Chemistry Concentration

### Five-year Program

The University offers a five-year program that allows qualified students to attain a Bachelor of Science degree in biochemistry and a Master of Science degree in chemistry with a pharmaceutical chemistry concentration.

Students applying to this program must have completed 62 credits and achieved a minimum grade point ratio of 3.00. Students must apply by the end of their junior year.

### Undergraduate Courses

| <b>1st Semester</b>                             | Credits   |
|---|-----------|
| BIOL1251, BIOL1253                              |           |
| General Biology I (Lecture and Laboratory)..... | 4         |
| CHEM1201  |           |
| General Chemistry I.....                        | 3         |
| CHEM1203  |           |
| General Chemistry Laboratory I.....             | 1         |
| ENWR1101  |           |
| Academic Writing.....                           | 3         |
| MATH1201  |           |
| Calculus I.....                                 | 4         |
| UNIV1001  |           |
| Transitioning to University Life.....           | 1         |
| <b>Total.....</b>                               | <b>16</b> |

| <b>2nd Semester</b>                              | Credits   |
|--|-----------|
| BIOL1252, BIOL1254                               |           |
| General Biology II (Lecture and Laboratory)..... | 4         |
| CHEM1202   |           |
| General Chemistry II.....                        | 3         |
| CHEM1204   |           |
| General Chemistry Laboratory II.....             | 1         |
| ENWR1102   |           |
| Academic Research and Writing.....               | 3         |
| MATH2202   |           |
| Calculus II.....                                 | 4         |
| UNIV1002   |           |
| Preparing for Professional Life.....             | 1         |
| <b>Total.....</b>                                | <b>16</b> |

| <b>3rd Semester</b>                     | Credits |
|---|---------|
| CHEM2261                                |         |
| Organic Chemistry I.....                | 3       |
| CHEM2263                                |         |
| Organic Chemistry Laboratory I.....     | 2       |
| ENGL2201                                |         |
| Masterpieces of World Literature I..... | 3       |
| PHYS2201                                |         |
| Physics Laboratory I.....               | 1       |

# Combined Degree Programs

B.S. in Biochemistry/M.S. in Cosmetic Science

|                                  | Credits |
|----------------------------------|---------|
| PHYS2203                         |         |
| University Physics I.....        | 3       |
| UNIV2001                         |         |
| Cross-cultural Perspectives..... | 3       |
| Total.....                       | 15      |

## 4th Semester

|  |    |
|--|----|
| CHEM2262                                 |    |
| Organic Chemistry II.....                | 3  |
| CHEM2264                                 |    |
| Organic Chemistry Laboratory II.....     | 2  |
| ENGL2202                                 |    |
| Masterpieces of World Literature II..... | 3  |
| PHYS2202                                 |    |
| Physics Laboratory II.....               | 1  |
| PHYS2204                                 |    |
| University Physics II.....               | 3  |
| UNIV2002                                 |    |
| Global Issues.....                       | 3  |
| Total.....                               | 15 |

## 5th Semester

|   |    |
|---|----|
| CHEM3241                                |    |
| Physical Chemistry I.....               | 3  |
| CHEM3243                                |    |
| Physical Chemistry Laboratory I.....    | 2  |
| CHEM3281                                |    |
| Biochemistry I.....                     | 3  |
| Advanced Mathematics Course* .....      | 3  |
| Humanities/Social Science Elective..... | 3  |
| Total.....                              | 14 |

## 6th Semester

|                                       |    |
|---------------------------------------|----|
| BIOL6733                              |    |
| Enzymology.....                       | 3  |
| CHEM3242                              |    |
| Physical Chemistry II.....            | 3  |
| CHEM3244                              |    |
| Physical Chemistry Laboratory II..... | 2  |
| Speech Course.....                    | 3  |
| Free Elective.....                    | 3  |
| Total.....                            | 14 |

## 7th Semester

|  |    |
|--|----|
| BIOL2210, BIOL2211                                     |    |
| Genetics (Lecture and Laboratory).....                 | 4  |
| BIOL4405   |    |
| Ethics in Science.....                                 | 3  |
| CHEM2211   |    |
| Inorganic Chemistry I.....                             | 3  |
| CHEM3231, CHEM3232                                     |    |
| Analytical Chemistry (Lecture<br>and Laboratory) ..... | 4  |
| Pharmaceutical Chemistry Requirement.....              | 3  |
| Total.....   | 17 |

## 8th Semester

|   | Credits |
|---|---------|
| CHEM4233  |         |
| Instrumental Analysis.....                              | 3       |
| CHEM4234  |         |
| Instrumental Analysis Laboratory.....                   | 2       |
| CHEM4314, CHEM3314                                      |         |
| Inorganic Chemistry II (Lecture<br>and Laboratory)..... | 3       |
| Pharmaceutical Chemistry Requirement.....               | 3       |
| Graduate Elective.....                                  | 3       |
| Total.....  | 14      |

## 9th Semester

|   |    |
|---|----|
| Pharmaceutical Chemistry Requirements.... | 9  |
| Graduate Elective.....                    | 3  |
| Total.....                                | 12 |

## 10th Semester

|   |    |
|---|----|
| Pharmaceutical Chemistry Requirement..... | 3  |
| Pharmaceutical Chemistry Electives.....   | 6  |
| Graduate Elective.....                    | 3  |
| Total.....                                | 12 |

## Graduate Course Requirements

Students should consult with their advisers for course selections and new course offerings.

## Required Courses (18 credits)

|  |   |
|--|---|
| CHEM6673                                       |   |
| Physical Organic Chemistry.....                | 3 |
| CHEM6754                                       |   |
| Drug-delivery Systems.....                     | 3 |
| CHEM6755                                       |   |
| Medicinal Chemistry.....                       | 3 |
| CHEM6781                                       |   |
| Biochemistry.....                              | 3 |
| CHEM7737                                       |   |
| Chemical Analysis of Pharmaceuticals...<br>and | 3 |
| A graduate COMM course (6000 level).....       | 3 |

## Pharmaceutical Chemistry Electives (6 credits)

|  |   |
|--|---|
| MATH6737   |   |
| Applied Statistics I.....  | 3 |
| Any 5000- or higher-level BIOL,<br>CHEM, COMM, COSC, MGMT,<br>MKTG or PHYS course..... | 3 |

A minimum of 121 credits is required for the B.S. degree, and a minimum of an additional 24 credits for the M.S. degree.

## B.S. in Biochemistry/M.S. in Cosmetic Science

### Five-year Program

The University offers a five-year program that allows qualified students to attain a Bachelor of Science degree in biochemistry and a Master of Science degree in cosmetic science. This program is designed for students who plan a career in the cosmetic, toiletries or fragrance industries.

Students applying to this program must have completed 62 credits and achieved a minimum grade point ratio of 3.00. Students must apply by the end of their junior year.

## Undergraduate Courses

### 1st Semester

|  | Credits |
|--|---------|
| BIOL1251, BIOL1253                                 |         |
| General Biology I (Lecture<br>and Laboratory)..... | 4       |
| CHEM1201   |         |
| General Chemistry I.....                           | 3       |
| CHEM1203   |         |
| General Chemistry Laboratory I.....                | 1       |
| ENWR1101   |         |
| Academic Writing.....                              | 3       |
| MATH1201   |         |
| Calculus I.....                                    | 4       |
| UNIV1001   |         |
| Transitioning to University Life .....             | 1       |
| Total.....   | 16      |

### 2nd Semester

|   |    |
|---|----|
| BIOL1252, BIOL1254                                  |    |
| General Biology II (Lecture<br>and Laboratory)..... | 4  |
| CHEM1202  |    |
| General Chemistry II.....                           | 3  |
| CHEM1204  |    |
| General Chemistry Laboratory II.....                | 1  |
| ENWR1102  |    |
| Academic Research and Writing.....                  | 3  |
| MATH2202  |    |
| Calculus II.....                                    | 4  |
| UNIV1002  |    |
| Preparing for Professional Life.....                | 1  |
| Total.....  | 16 |

### 3rd Semester

|   |   |
|---|---|
| CHEM2261                                |   |
| Organic Chemistry I.....                | 3 |
| CHEM2263                                |   |
| Organic Chemistry Laboratory I.....     | 2 |
| ENGL2201                                |   |
| Masterpieces of World Literature I..... | 3 |
| PHYS2201                                |   |
| Physics Laboratory I.....               | 1 |

\*Selected from MATH2205 Calculus III or MATH2537 Applied Statistics I.

# Combined Degree Programs

B.S. in Biology/M.S. in Acupuncture and Oriental Medicine

|                                  | Credits |
|----------------------------------|---------|
| PHYS2203                         |         |
| University Physics I.....        | 3       |
| UNIV2001                         |         |
| Cross-cultural Perspectives..... | 3       |
| Total.....                       | 15      |

## 4th Semester

|  |    |
|--|----|
| CHEM2262                                 |    |
| Organic Chemistry II.....                | 3  |
| CHEM2264                                 |    |
| Organic Chemistry Laboratory II.....     | 2  |
| ENGL2202                                 |    |
| Masterpieces of World Literature II..... | 3  |
| PHYS2202                                 |    |
| Physics Laboratory II.....               | 1  |
| PHYS2204                                 |    |
| University Physics II.....               | 3  |
| UNIV2002                                 |    |
| Global Issues.....                       | 3  |
| Total.....                               | 15 |

## 5th Semester

|   |    |
|---|----|
| CHEM3241                                |    |
| Physical Chemistry I.....               | 3  |
| CHEM3243                                |    |
| Physical Chemistry Laboratory I.....    | 2  |
| CHEM3281                                |    |
| Biochemistry I.....                     | 3  |
| Advanced Mathematics Course*.....       | 3  |
| Humanities/Social Science Elective..... | 3  |
| Total.....                              | 14 |

## 6th Semester

|                                       |    |
|---------------------------------------|----|
| BIOL6733                              |    |
| Enzymology.....                       | 3  |
| CHEM3242                              |    |
| Physical Chemistry II.....            | 3  |
| CHEM3244                              |    |
| Physical Chemistry Laboratory II..... | 2  |
| Speech Course.....                    | 3  |
| Free Elective.....                    | 3  |
| Total.....                            | 14 |

## 7th Semester

|  |    |
|--|----|
| BIOL2210, BIOL2211                                 |    |
| Genetics (Lecture and Laboratory).....             | 4  |
| BIOL4405   |    |
| Ethics in Science.....                             | 3  |
| CHEM2211   |    |
| Inorganic Chemistry I.....                         | 3  |
| CHEM3231, CHEM3232                                 |    |
| Analytical Chemistry (Lecture and Laboratory)..... | 4  |
| Cosmetic Science Requirement.....                  | 3  |
| Total.....   | 17 |

| <b>8th Semester</b>                                  | Credits |
|--|---------|
| CHEM4233   |         |
| Instrumental Analysis.....                           | 3       |
| CHEM4234   |         |
| Instrumental Analysis Laboratory.....                | 2       |
| CHEM4314, CHEM3314                                   |         |
| Inorganic Chemistry II (Lecture and Laboratory)..... | 3       |
| Cosmetic Science Requirement.....                    | 3       |
| Cosmetic Science Elective.....                       | 3       |
| Total.....   | 14      |

## 9th Semester

|                                    |    |
|------------------------------------|----|
| Cosmetic Science Requirements..... | 6  |
| Cosmetic Science Elective.....     | 3  |
| Graduate Requirement.....          | 3  |
| Total.....                         | 12 |

## 10th Semester

|                                    |    |
|------------------------------------|----|
| COSC6548                           |    |
| Cosmetic Science Laboratory.....   | 2  |
| Cosmetic Science Requirements..... | 6  |
| Graduate Requirement.....          | 3  |
| Total.....                         | 11 |

## Graduate Course Requirements

Students should consult with their advisers for course selections and new course offerings.

### Required Courses (20 credits)

|   |   |
|---|---|
| BIOL6756                                      |   |
| Dermal Pharmacology and Immunology.....       | 3 |
| CHEM6526                                      |   |
| Product Development.....                      | 3 |
| CHEM6529                                      |   |
| Microtoxicology and Biochemistry.....         | 3 |
| COSC6543                                      |   |
| Hair-care Raw Materials and Formulations..... | 3 |
| COSC6547                                      |   |
| Skin-care Raw Materials and Formulations..... | 3 |
| COSC6548                                      |   |
| Cosmetic Science Laboratory.....              | 2 |
| PHYS6753                                      |   |
| Applied Colloid and Surface Science.....      | 3 |
| <b>Cosmetic Science Electives (3 credits)</b> |   |
| CHEM6546                                      |   |
| Perfumery.....                                | 3 |
| CHEM6773                                      |   |
| Polymer Chemistry.....                        | 3 |
| CHEM6781                                      |   |
| Biochemistry.....                             | 3 |
| COSC6542                                      |   |
| Claims Substantiation.....                    | 3 |
| COSC6549                                      |   |
| Color Cosmetics.....                          | 3 |

A minimum of 120 credits is required for the B.S. degree, and a minimum of an additional 25 credits for the M.A. degree.

## B.S. in Biology/M.S. in Acupuncture and Oriental Medicine

### Five-year Program

(with Finger Lakes School of Acupuncture and Oriental Medicine, New York Chiropractic College)

This accelerated, combined degree program provides qualified students the opportunity to complete the bachelor's degree and a master's degree in five years, one year less than the normal span of six years. The bachelor's degree (B.S. in biology) is awarded by Fairleigh Dickinson University and the master's degree (M.S.) is from the Finger Lakes School of Acupuncture and Oriental Medicine (FLSAOM) of New York Chiropractic College in Seneca Falls, N.Y.

The FLSAOM program provides a comprehensive professional education in acupuncture and oriental medicine that, combined with instruction in biomedicine, prepares graduates to practice in a wide range of clinical settings. The programs emphasize an integrative and holistic approach (<http://aom.nycc.edu>).

Students are admitted at FDU as incoming freshmen or qualified transfer students. They may apply for the B.S. degree upon successful completion of six semesters at FDU, including the courses listed below, and the first three trimesters at FLSAOM. A maximum of 32 credits from FLSAOM may be transferred toward completion of the B.S. degree at FDU.

### Admission to the Combined Degree Program

High school seniors with a combined SAT score of 1150 (at least 600 math and 550 verbal) or 25 on ACT and higher and ranking in the top 25 percent of their class or qualified students who have completed their first year of college study with a grade point ratio of 3.10 or higher may apply for admission to the combined degree program.

After a preliminary screening of the applications by the FDU Office of Admissions, qualified applicants will be invited to sit for an interview with the FDU/FLSAOM Joint Admissions Committee. Recommendation from the preprofessional adviser is required.

\*MATH2203 Calculus III or MATH2357 Applied Statistics I.

# Combined Degree Programs

B.S. in Biology/M.S. in Acupuncture and Oriental Medicine

## Combined Degree Program Requirements

While enrolled at FDU, students are required to follow the accelerated preprofessional curriculum in biology and are expected to maintain a minimum cumulative grade point ratio of 3.10 or higher in all course work and a minimum of C in all science and math courses.

## Qualifying for Enrollment at Finger Lakes School of Acupuncture and Oriental Medicine (FLSAOM)

Qualified students enrolled in the combined degree program will be guaranteed a seat at FLSAOM for training in acupuncture and oriental medicine. To qualify, students must meet the following criteria:

- Completion of all FDU curriculum requirements, including the general education requirements and the degree program requirements for the major and all prerequisite courses required for admission at FLSAOM. Students need to obtain a grade of C or higher in science and math courses;
- A grade point ratio of 3.10 or higher;
- Students currently enrolled at FDU

who seek admission to the combined degree program must apply to the School of Natural Sciences, University College: Arts • Sciences • Professional Studies, Metropolitan Campus, Teaneck, N.J., prior to the completion of 60 credit hours at FDU or at least one year before the anticipated date of matriculation at FLSAOM; and

- Students enrolled in the combined degree program who decide to complete the B.S. degree at FDU prior to entering FLSAOM must make this known to their school director or department chair prior to the completion of 60 credits at FDU or at least one year before the anticipated date of matriculation at FLSAOM.

## Pre-acupuncture and Oriental Medicine Curriculum

Under the provisions of the pre-acupuncture and oriental medicine program, students matriculate in the School of Natural Sciences of University College: Arts • Sciences • Professional Studies for a minimum of 98 credits of course work leading to the B.S. in biology (preprofessional option). The curriculum is as follows:

| <b>1st Semester</b>  | Credits      | <b>4th Semester</b>  | Credits      |
|--|--------------|--|--------------|
| BIOL1251, BIOL1253   |              | BIOL2210, BIOL2211   |              |
| General Biology I (Lecture and Laboratory).....              | 4            | Genetics (Lecture and Laboratory).....                       | 4            |
| CHEM1201   |              | BIOL2300   |              |
| General Chemistry I.....                                     | 3            | Experimental Design.....                                     | 3            |
| CHEM1203   |              | CHEM2262   |              |
| General Chemistry Laboratory I.....                          | 1            | Organic Chemistry II.....                                    | 3            |
| ENWR1101   |              | CHEM2264   |              |
| Academic Writing.....  | 3            | Organic Chemistry Laboratory II.....                         | 2            |
| UNIV1001   |              | ENGL2202   |              |
| Transitioning to University Life.....                        | 1            | Masterpieces of World Literature II.....                     | 3            |
|  | Total.....12 | UNIV2002   |              |
|  |              | Global Issues.....   | 3            |
|  |              |  | Total.....18 |
| <b>2nd Semester</b>  |              | <b>5th Semester</b>  |              |
| BIOL1252, BIOL1254   |              | BIOL2237, BIOL2239   |              |
| General Biology II (Lecture and Laboratory).....             | 4            | Human Structure and Function I (Lecture and Laboratory)..... | 4            |
| CHEM1202   |              | BIOL3225, BIOL3226   |              |
| General Chemistry II.....                                    | 3            | General Microbiology (Lecture and Laboratory).....           | 4            |
| CHEM1204   |              | BIOL4900   |              |
| General Chemistry Laboratory II.....                         | 1            | Biology Seminar I.....                                       | 1            |
| ENWR1102   |              | PHYS2201   |              |
| Academic Research and Writing.....                           | 3            | Physics Laboratory I.....                                    | 1            |
| UNIV1002   |              | PHYS2203   |              |
| Preparing for Professional Life.....                         | 1            | University Physics I.....                                    | 3            |
| Mathematics Sequence*.....                                   | 4            | UNIV2001   |              |
|  | Total.....16 | Cross-cultural Perspectives.....                             | 3            |
|  |              |  | Total.....16 |
| <b>3rd Semester</b>  |              | <b>6th Semester</b>  |              |
| BIOL2250, BIOL2150   |              | BIOL4240, BIOL4241   |              |
| Ecology and Field Biology (Lecture and Laboratory).....      | 4            | Molecular Cell Biology (Lecture and Laboratory).....         | 4            |
| or   |              | BIOL4405   |              |
| MBIO1209, MBIO1219   |              | Ethics in Science.....                                       | 3            |
| Introduction to Marine Biology (Lecture and Laboratory)..... | 4            | CHEM3281   |              |
| CHEM2261   |              | Biochemistry I.....  | 3            |
| Organic Chemistry I.....                                     | 3            | PHYS2202   |              |
| CHEM2263   |              | General Physics Laboratory II.....                           | 1            |
| Organic Chemistry Laboratory I.....                          | 2            | PHYS2204   |              |
| ENGL2201   |              | University Physics II.....                                   | 3            |
| Masterpieces of World Literature I.....                      | 3            | Oral Communication Elective.....                             | 3            |
| Mathematics Sequence*.....                                   | 4            |  | Total.....17 |
|  | Total.....16 |  |              |

*\*In the freshman year, students are required to take either precalculus or calculus. The first-year course must be followed by a second mathematics course in sequence, i.e., Calculus I or Calculus II.*

# Combined Degree Programs

B.S. in Biology/M.S. in Biology

## B.S. in Biology/M.S. in Biology Five-year Program

The University offers a five-year program that allows qualified students to attain a Bachelor of Science degree in biology and a Master of Science degree in biology at the Metropolitan Campus.

### Metropolitan Campus Sequence Undergraduate Courses

| 1st Semester                          | Credits |
|---------------------------------------|---------|
| BIOL1251                              |         |
| General Biology I.....                | 3       |
| BIOL1253                              |         |
| Laboratory: General Biology I.....    | 1       |
| CHEM1201                              |         |
| General Chemistry I.....              | 3       |
| CHEM1203                              |         |
| General Chemistry Laboratory I.....   | 1       |
| ENWR1101                              |         |
| Academic Writing.....                 | 3       |
| UNIV1001                              |         |
| Transitioning to University Life..... | 1       |
| Total.....                            | 12      |

### 2nd Semester

|                                      |    |
|--------------------------------------|----|
| BIOL1252                             |    |
| General Biology II.....              | 3  |
| BIOL1254                             |    |
| Laboratory: General Biology II.....  | 1  |
| CHEM1202                             |    |
| General Chemistry II.....            | 3  |
| CHEM1204                             |    |
| General Chemistry Laboratory II..... | 1  |
| ENWR1102                             |    |
| Academic Research and Writing.....   | 3  |
| UNIV1002                             |    |
| Preparing for Professional Life..... | 1  |
| Mathematics Sequence*.....           | 4  |
| Total.....                           | 16 |

### 3rd Semester

|   |   |
|---|---|
| BIOL2250, BIOL2150  |   |
| Ecology and Field Biology<br>(Lecture and Laboratory)           |   |
| or  |   |
| MBIO1209, MBIO1219  |   |
| Introduction to Marine Biology<br>(Lecture and Laboratory)..... | 4 |
| CHEM2261  |   |
| Organic Chemistry I.....  | 3 |
| CHEM2263  |   |
| Organic Chemistry Laboratory I.....                             | 2 |

\*In the freshman year, students are required to take either precalculus or calculus. The first-year course must be followed by a second mathematics course in sequence (i.e., Calculus I or Calculus II).

|   | Credits |
|---|---------|
| ENGL2201                                |         |
| Masterpieces of World Literature I..... | 3       |
| Mathematics Sequence.....               | 4       |
| Total.....                              | 16      |

### 4th Semester

|  |    |
|--|----|
| BIOL2210, BIOL2211                       |    |
| Genetics (Lecture and Laboratory).....   | 4  |
| BIOL2300                                 |    |
| Experimental Design.....                 | 3  |
| CHEM2262                                 |    |
| Organic Chemistry II.....                | 3  |
| CHEM2264                                 |    |
| Organic Chemistry Laboratory II.....     | 2  |
| ENGL2202                                 |    |
| Masterpieces of World Literature II..... | 3  |
| Total.....                               | 15 |

### 5th Semester

|   |    |
|---|----|
| BIOL2237, BIOL2239  |    |
| Human Structure and Function I<br>(Lecture and Laboratory)..... | 4  |
| BIOL3225, BIOL3226  |    |
| General Microbiology<br>(Lecture and Laboratory).....           | 4  |
| PHYS2201  |    |
| Physics Laboratory I.....                                       | 1  |
| PHYS2203  |    |
| University Physics I.....                                       | 3  |
| UNIV2001  |    |
| Cross-cultural Perspectives.....                                | 3  |
| Total.....  | 15 |

### 6th Semester

|   |     |
|---|-----|
| CHEM3281                                    |     |
| Biochemistry I.....                         | 3   |
| PHYS2202                                    |     |
| Physics Laboratory II.....                  | 1   |
| PHYS2204                                    |     |
| University Physics II.....                  | 3   |
| Biology Elective.....                       | 3   |
| Art/Humanities/Social Science Elective..... | 5   |
| Free Elective.....                          | 0-1 |
| Total.....                                  | 16  |

| 7th Semester  | Credits |
|---|---------|
| BIOL4855, BIOL4856  |         |
| Molecular Biology Techniques<br>(Lecture and Laboratory)..... | 3       |
| BIOL4900  |         |
| Biology Seminar I.....  | 1       |
| UNIV2002  |         |
| Global Issues.....  | 3       |
| Biology Elective.....   | 3       |
| Graduate Biology Elective.....                                | 3       |
| Free Elective.....  | 3       |
| Total.....  | 16      |

### 8th Semester

|   |    |
|---|----|
| BIOL4405  |    |
| Ethics in Science.....                                  | 3  |
| BIOL4901  |    |
| Biology Seminar II.....                                 | 1  |
| BIOL6240, BIOL6241                                      |    |
| Molecular Cell Biology<br>(Lecture and Laboratory)..... | 4  |
| Oral Communication Elective.....                        | 3  |
| Graduate Biology Elective.....                          | 3  |
| Total.....  | 14 |

### 9th Semester

|                                 |    |
|---------------------------------|----|
| Graduate Biology Electives..... | 12 |
|---------------------------------|----|

### 10th Semester

|                                 |    |
|---------------------------------|----|
| Graduate Biology Electives..... | 10 |
|---------------------------------|----|

## Graduate Course Requirements

Students should consult with their advisers for course selections and new course offerings. Students may take any biology (BIOL) course at or above the 5000 level.

## B.S./M.S. Requirements

One hundred forty-two (142) credits are required to earn both the B.S. and M.S. degrees. A minimum of 120 credits is required to earn the B.S. degree and a minimum of 22 additional credits for the M.S. degree.

# Combined Degree Programs

B.S. in Business Majors/M.B.A. and M.S. in Business Majors  
B.S. in Chemistry/M.S. in Chemistry with Pharmaceutical Chemistry Concentration

## **B.S. in Business Administration or Entrepreneurship or Finance or Management or Marketing/ M.B.A. in Accounting or Business Administration or Entrepreneurship or Finance or Information Systems or International Business or Management or Marketing or Pharmaceutical Management Five-year Program (4+1)**

Fairleigh Dickinson University offers 45 five-year combined degree programs (4+1): B.S. in business administration/ M.B.A. in accounting or business administration or entrepreneurship or finance or information systems or international business or management or marketing or pharmaceutical management; B.S. in entrepreneurship/M.B.A. in accounting or business administration or entrepreneurship or finance or information systems or international business or management or marketing or pharmaceutical management; B.S. in finance/M.B.A. in accounting or business administration or entrepreneurship or finance or information systems or international business or management or marketing or pharmaceutical management; B.S. in management/M.B.A. in accounting or business administration or entrepreneurship or finance or information systems or international business or management or marketing or pharmaceutical management; and B.S. in marketing/M.B.A. in accounting or business administration or entrepreneurship or finance or information systems or international business or management or marketing or pharmaceutical management. For information contact Janette Shurdom, assistant dean for undergraduate programs and student services, Silberman College of Business, at 201-692-7206 or shurdom@fd.edu.

Admission requirements for the graduate portion of this program apply.

## **B.S. in Business Administration or Entrepreneurship or Finance or Management or Marketing/ M.S. in Accounting or Supply Chain Management or Taxation**

### **Five-year Program (4+1)**

Fairleigh Dickinson University offers 15 five-year combined degree programs (4+1): B.S. in business administration/M.S. in accounting or supply chain management or taxation; B.S. in entrepreneurship/M.S. in accounting or supply chain management or taxation; B.S. in finance/M.S. in accounting or supply chain management or taxation; B.S. in management/M.S. in accounting or supply chain management or taxation; and B.S. in marketing/M.S. in accounting or supply chain management or taxation. For information contact Janette Shurdom, assistant dean for undergraduate programs and student services, Silberman College of Business, at 201-692-7206 or shurdom@fd.edu.

Admission requirements for the graduate portion of this program apply.

## **B.S. in Chemistry/M.S. in Chemistry with Pharmaceutical Chemistry Concentration**

### **Five-year Program**

The University offers a five-year program that allows qualified students to attain a Bachelor of Science degree in chemistry and a Master of Science degree in chemistry with a pharmaceutical chemistry concentration.

### **Florham Campus**

### **Requirements for the Combined B.S. in Chemistry/M.S. in Chemistry with a Concentration in Pharmaceutical Chemistry**

| <b>First Year (31 credits)</b>  | Credits |
|---|---------|
| BIOL1201, BIOL1203<br>Biological Diversity<br>(Lecture and Laboratory).....                                       | 4       |
| BIOL1202, BIOL1204<br>Introduction to Molecules, Cells and<br>Genes (Lecture and Laboratory).....                 | 4       |
| CHEM1201, CHEM1202<br>General Chemistry I, II .....   | 6       |
| CHEM1203, CHEM1204<br>General Chemistry Laboratory I, II.....   | 2       |
| ENGW1101<br>College Writing Workshop.....   | 3       |
| ENGW1102<br>Research Writing Workshop .....   | 3       |
| MATH1203, MATH2202<br>Calculus I, II .....  | 8       |
| UNIV1001<br>Transitioning to College Life.....  | 1       |
| <b>Second Year (27 credits)</b>   |         |
| CHEM2261, CHEM2262<br>Organic Chemistry I, II .....   | 6       |
| CHEM2263, CHEM2264<br>Organic Chemistry Laboratory I, II.....   | 2       |
| PHYS2003, PHYS2203;<br>PHYS2004, PHYS2014<br>General Physics with Calculus I, II<br>(Lecture and Laboratory)..... | 8       |
| UNIV1002<br>Preparing for Professional Life .....   | 1       |
| UNIV2001<br>Cross-cultural Perspectives .....   | 1       |
| Humanities Elective .....   | 3       |
| General Education Electives.....  | 6       |

# Combined Degree Programs

B.S. in Chemistry/M.S. in Chemistry with Pharmaceutical Chemistry Concentration

## Third Year (37 credits) Credits

|  |   |
|--|---|
| CHEM2215, CHEM2214<br>Basic Inorganic Chemistry<br>(Lecture and Laboratory)..... | 4 |
| CHEM2221, CHEM2223<br>Analytical Chemistry<br>(Lecture and Laboratory).....      | 4 |
| CHEM3241, CHEM3242<br>Physical Chemistry I, II.....                              | 6 |
| CHEM3243, CHEM3244<br>Physical Chemistry Laboratory I, II.....                   | 4 |
| CHEM3281, CHEM3389<br>Biochemistry (Lecture and<br>Laboratory).....              | 4 |
| MATH1133<br>Applied Statistics.....  | 3 |
| UNIV2002<br>Global Issues.....   | 3 |
| Foreign Language Courses.....  | 6 |
| General Education Elective.....  | 3 |

## Fourth Year (31 credits)

|  |   |
|--|---|
| CHEM4215<br>Advanced Inorganic Chemistry.....                                | 3 |
| CHEM4233, CHEM4234<br>Instrumental Analysis<br>(Lecture and Laboratory)..... | 5 |
| CHEM4401<br>Chemistry Seminar.....   | 1 |
| CHEM6663<br>Introduction to Medicinal Chemistry.....                         | 3 |
| CHEM6685<br>Pharmacology.....  | 3 |
| CHEM6781<br>Biochemistry.....  | 3 |
| CHEM7751<br>Chemical Kinetics.....   | 3 |
| Senior Research Elective.....  | 1 |
| Undergraduate Electives.....   | 9 |

## Fifth Year (24 credits)

|   |   |
|---|---|
| CHEM6673<br>Physical Organic Chemistry.....           | 3 |
| CHEM6830–CHEM6833<br>Special Topics in Chemistry..... | 3 |
| CHEM7735<br>Pharmaceutical Analysis.....              | 3 |
| CHEM7747<br>Protein Chemistry*.....                   | 3 |
| CHEM7751<br>Chemical Kinetics*.....                   | 3 |
| CHEM7753<br>Pharmacokinetics.....                     | 3 |
| Undergraduate Electives.....                          | 6 |

## Metropolitan Campus

Students applying to this program must have completed 62 credits and achieved a minimum grade point ratio of 3.00. Students must apply by the end of their junior year.

### Recommended Course Sequence

#### 1st Semester Credits

|  |    |
|--|----|
| BIOL1251, BIOL1253<br>General Biology I (Lecture<br>and Laboratory)..... | 4  |
| CHEM1201<br>General Chemistry I.....                                     | 3  |
| CHEM1203<br>General Chemistry Laboratory I.....                          | 1  |
| ENWR1101<br>Academic Writing.....  | 3  |
| MATH1201<br>Calculus I.....  | 4  |
| UNIV1001<br>Transitioning to University Life.....                        | 1  |
| Total.....   | 16 |

#### 2nd Semester

|   |    |
|---|----|
| BIOL1252, BIOL1254<br>General Biology II (Lecture<br>and Laboratory)..... | 4  |
| CHEM1202<br>General Chemistry II.....                                     | 3  |
| CHEM1204<br>General Chemistry Laboratory II.....                          | 1  |
| ENWR1102<br>Academic Research and Writing.....                            | 3  |
| MATH2202<br>Calculus II.....  | 4  |
| UNIV1002<br>Preparing for Professional Life.....                          | 1  |
| Total.....  | 16 |

#### 3rd Semester

|   |    |
|---|----|
| CHEM2261<br>Organic Chemistry I.....                | 3  |
| CHEM2263<br>Organic Chemistry Laboratory I.....     | 2  |
| ENGL2201<br>Masterpieces of World Literature I..... | 3  |
| PHYS2201<br>Physics Laboratory I.....               | 1  |
| PHYS2203<br>University Physics I.....               | 3  |
| UNIV2001<br>Cross-cultural Perspectives.....        | 3  |
| Total.....  | 15 |

## 4th Semester Credits

|  |    |
|--|----|
| CHEM2262<br>Organic Chemistry II.....                | 3  |
| CHEM2264<br>Organic Chemistry Laboratory II.....     | 2  |
| ENGL2202<br>Masterpieces of World Literature II..... | 3  |
| PHYS2202<br>Physics Laboratory II.....               | 1  |
| PHYS2204<br>University Physics II.....               | 3  |
| UNIV2002<br>Global Issues.....                       | 3  |
| Total.....   | 15 |

## 5th Semester

|  |    |
|--|----|
| CHEM3241<br>Physical Chemistry I.....            | 3  |
| CHEM3243<br>Physical Chemistry Laboratory I..... | 2  |
| CHEM3281<br>Biochemistry I.....                  | 3  |
| Advanced Mathematics Course*.....                | 3  |
| Humanities/Social Science Elective.....          | 3  |
| Total.....                                       | 14 |

## 6th Semester

|   |    |
|---|----|
| CHEM3242<br>Physical Chemistry II.....            | 3  |
| CHEM3244<br>Physical Chemistry Laboratory II..... | 2  |
| Speech Course.....                                | 3  |
| Science Elective.....                             | 3  |
| Free Elective.....                                | 3  |
| Total.....  | 14 |

## 7th Semester

|   |    |
|---|----|
| BIOL4405<br>Ethics in Science.....  | 3  |
| CHEM2211<br>Inorganic Chemistry I.....                                      | 3  |
| CHEM3231, CHEM3232<br>Analytical Chemistry<br>(Lecture and Laboratory)..... | 4  |
| Pharmaceutical Chemistry Requirements.....                                  | 6  |
| Total.....  | 16 |

## 8th Semester

|   |    |
|---|----|
| CHEM4233<br>Instrumental Analysis.....  | 3  |
| CHEM4234<br>Instrumental Analysis Laboratory.....                             | 2  |
| CHEM4314, CHEM3314<br>Inorganic Chemistry II<br>(Lecture and Laboratory)..... | 3  |
| Pharmaceutical Chemistry Requirement.....                                     | 3  |
| Graduate Elective.....  | 3  |
| Total.....  | 14 |

\*Graduate electives. May be substituted with graduate courses from other departments (not to exceed 6 credits) relevant to the degree. Permission of the department chair is required.

\*Selected from MATH2205 Calculus III or MATH2537 Applied Statistics I.

# Combined Degree Programs

B.S. in Chemistry/M.S. in Cosmetic Science

| <b>9th Semester</b>                    | Credits |
|--|---------|
| Pharmaceutical Chemistry Requirements  | 6       |
| Pharmaceutical Chemistry Elective..... | 3       |
| Graduate Elective.....                 | 3       |
| Total.....                             | 12      |

| <b>10th Semester</b>                      | Credits |
|---|---------|
| Pharmaceutical Chemistry Requirement..... | 3       |
| Pharmaceutical Chemistry Elective.....    | 3       |
| Graduate Electives.....                   | 6       |
| Total.....                                | 12      |

## Graduate Course Requirements

Students should consult with their advisers for course selections and new course offerings.

### Required Courses (18 credits)

|  |   |
|--|---|
| CHEM6673                                 |   |
| Physical Organic Chemistry.....          | 3 |
| CHEM6754                                 |   |
| Drug-delivery Systems.....               | 3 |
| CHEM6755                                 |   |
| Medicinal Chemistry.....                 | 3 |
| CHEM6781                                 |   |
| Biochemistry.....                        | 3 |
| CHEM7737                                 |   |
| Chemical Analysis of Pharmaceuticals...3 |   |
| Graduate COMM Course (6000 level).....   | 3 |

### Pharmaceutical Chemistry Electives (6 credits)

|  |   |
|--|---|
| MATH6737   |   |
| Applied Statistics I.....  | 3 |
| Any 5000- or higher-level BIOL,<br>CHEM, COMM, COSC, MGMT,<br>MKTG or PHYS course..... | 3 |

## B.S. in Chemistry/M.S. in Cosmetic Science Five-year Program

The University offers a five-year program that allows qualified students to attain a Bachelor of Science degree in chemistry and a Master of Science in cosmetic science.

Students applying to this program must have completed 62 credits and achieved a minimum grade point ratio of 3.00. Students must apply by the end of their junior year.

Undergraduate students who have successfully completed the required two-semester sequence in organic chemistry and who have an overall grade point ratio of more than 3.00 may apply to one of the combined B.S./M.S. programs described below.

### Undergraduate Courses

| <b>1st Semester</b>                                | Credits |
|--|---------|
| BIOL1251, BIOL1253                                 |         |
| General Biology I (Lecture<br>and Laboratory)..... | 4       |
| CHEM1201   |         |
| General Chemistry I.....                           | 3       |
| CHEM1203   |         |
| General Chemistry Laboratory I.....                | 1       |
| ENWR1101   |         |
| Academic Writing.....                              | 3       |
| MATH1201   |         |
| Calculus I.....                                    | 4       |
| UNIV1001   |         |
| Transitioning to University Life.....              | 1       |
| Total.....   | 16      |

### 2nd Semester

|   |    |
|---|----|
| BIOL1252, BIOL1254                                  |    |
| General Biology II (Lecture and<br>Laboratory)..... | 4  |
| CHEM1202  |    |
| General Chemistry II.....                           | 3  |
| CHEM1204  |    |
| General Chemistry Laboratory II.....                | 1  |
| ENWR1102  |    |
| Academic Research and Writing.....                  | 3  |
| MATH2202  |    |
| Calculus II.....                                    | 4  |
| UNIV1002  |    |
| Preparing for Professional Life.....                | 1  |
| Total.....  | 16 |

| <b>3rd Semester</b>                     | Credits |
|---|---------|
| CHEM2261                                |         |
| Organic Chemistry I.....                | 3       |
| CHEM2263                                |         |
| Organic Chemistry Laboratory I.....     | 2       |
| ENGL2201                                |         |
| Masterpieces of World Literature I..... | 3       |
| PHYS2201                                |         |
| Physics Laboratory I.....               | 1       |
| PHYS2203                                |         |
| University Physics I.....               | 3       |
| UNIV2001                                |         |
| Cross-cultural Perspectives.....        | 3       |
| Total.....                              | 15      |

### 4th Semester

|  |    |
|--|----|
| CHEM2262                                 |    |
| Organic Chemistry II.....                | 3  |
| CHEM2264                                 |    |
| Organic Chemistry Laboratory II.....     | 2  |
| ENGL2202                                 |    |
| Masterpieces of World Literature II..... | 3  |
| PHYS2202                                 |    |
| Physics Laboratory II.....               | 1  |
| PHYS2204                                 |    |
| University Physics II.....               | 3  |
| UNIV2002                                 |    |
| Global Issues.....                       | 3  |
| Total.....                               | 15 |

### 5th Semester

|   |    |
|---|----|
| CHEM3241                                |    |
| Physical Chemistry I.....               | 3  |
| CHEM3243                                |    |
| Physical Chemistry Laboratory I.....    | 2  |
| CHEM3281                                |    |
| Biochemistry I.....                     | 3  |
| Advanced Mathematics Course*.....       | 3  |
| Humanities/Social Science Elective..... | 3  |
| Total.....                              | 14 |

### 6th Semester

|                                       |    |
|---------------------------------------|----|
| CHEM3242                              |    |
| Physical Chemistry II.....            | 3  |
| CHEM3244                              |    |
| Physical Chemistry Laboratory II..... | 2  |
| Speech Course.....                    | 3  |
| Cosmetic Science Elective.....        | 3  |
| Free Elective.....                    | 3  |
| Total.....                            | 14 |

\*Selected from MATH2205 Calculus III or MATH2337 Applied Statistics I.



# Combined Degree Programs

B.S. in Computer Science/M.S. in Computer Science

| <b>7th Semester</b>                                   | Credits |
|---|---------|
| BIOL4405  |         |
| Ethics in Science.....                                | 3       |
| CHEM2211  |         |
| Inorganic Chemistry I.....                            | 3       |
| CHEM3231, CHEM3232                                    |         |
| Analytical Chemistry<br>(Lecture and Laboratory)..... | 4       |
| Cosmetic Science Requirement.....                     | 3       |
| Free Elective.....                                    | 3       |
| Total.....  | 16      |

| <b>8th Semester</b>                                     | Credits |
|---|---------|
| CHEM4233  |         |
| Instrumental Analysis.....                              | 3       |
| CHEM4234  |         |
| Instrumental Analysis Laboratory.....                   | 2       |
| CHEM4314, CHEM3314                                      |         |
| Inorganic Chemistry II<br>(Lecture and Laboratory)..... | 3       |
| Cosmetic Science Requirement.....                       | 3       |
| Cosmetic Science Elective.....                          | 3       |
| Total.....  | 14      |

| <b>9th Semester</b>                | Credits |
|------------------------------------|---------|
| Cosmetic Science Requirements..... | 6       |
| Graduate Requirements.....         | 6       |
| Total.....                         | 12      |

| <b>10th Semester</b>               | Credits |
|------------------------------------|---------|
| COSC6548                           |         |
| Cosmetic Science Laboratory.....   | 2       |
| Cosmetic Science Requirements..... | 6       |
| Graduate Requirement.....          | 3       |
| Total.....                         | 11      |

## Graduate Course Requirements

Students should consult with their advisers for course selections and new course offerings.

### Required Courses (20 credits)

|  |   |
|--|---|
| BIOL6756   |   |
| Dermal Pharmacology and<br>Immunology.....       | 3 |
| CHEM6526   |   |
| Product Development.....                         | 3 |
| CHEM6529   |   |
| Microtoxicology and Biochemistry.....            | 3 |
| COSC6543   |   |
| Hair-care Raw Materials and<br>Formulations..... | 3 |

|  | Credits |
|--|---------|
| COSC6547   |         |
| Skin-care Raw Materials and<br>Formulations..... | 3       |
| COSC6548   |         |
| Cosmetic Science Laboratory.....                 | 2       |
| PHYS6753   |         |
| Applied Colloid and Surface Science.....         | 3       |

### Cosmetic Science Electives (3 credits)

|                            |   |
|----------------------------|---|
| CHEM6546                   |   |
| Perfumery.....             | 3 |
| CHEM6773                   |   |
| Polymer Chemistry.....     | 3 |
| CHEM6781                   |   |
| Biochemistry.....          | 3 |
| COSC6542                   |   |
| Claims Substantiation..... | 3 |
| COSC6549                   |   |
| Color Cosmetics.....       | 3 |

A minimum of 120 credits is required for the B.S. degree, and a minimum of an additional 23 credits for the M.S. degree.

## B.S. in Computer Science/ M.S. in Computer Science Five-year Program

The University offers a five-year program that allows qualified students to attain a Bachelor of Science degree in computer science and a Master of Science degree in computer science with a combined course load of 141 credits, which is 9 credits less than that of the separate degrees.

Students are eligible to apply for the combined program after completing 60 undergraduate credits and obtaining a grade point ratio (GPR) of 3.00 or better in the first 15 credits of computer science courses. Applications should be submitted before the student has completed 27 credits of computer science courses. Upon completion of their undergraduate degrees, students who have maintained a 3.00 GPR in their computer science courses will be admitted to the graduate computer science program.

### B.S./M.S. in Computer Science 120+21=141 credits

#### Computer Science Undergraduate Core Requirements (36 credits)

|  |   |
|--|---|
| CSCI1201   |   |
| Computer Programming I.....                          | 3 |
| CSCI1202   |   |
| Computer Programming II.....                         | 3 |
| CSCI2215   |   |
| Introduction to Computer Science.....                | 3 |
| CSCI2232   |   |
| Data Structures.....                                 | 3 |
| CSCI2247   |   |
| Assembly Language Programming.....                   | 3 |
| CSCI3240   |   |
| Computer Networks.....                               | 3 |
| CSCI3251   |   |
| Design of Software Systems.....                      | 3 |
| CSCI3255   |   |
| Mathematical Foundations of<br>Computer Science..... | 3 |
| CSCI6603   |   |
| Computer Architecture*.....                          | 3 |
| CSCI6623   |   |
| Database Systems*.....                               | 3 |
| CSCI6638   |   |
| Operating Systems*.....                              | 3 |
| ENGR2286   |   |
| Digital System Design.....                           | 3 |

*These courses can be applied to the M.S. degree, provided that the student earns a grade of B or better.*

# Combined Degree Programs

B.S. in Computer Science/M.S. in Management Information Systems

## Science Requirements (16 credits)

|                            | Credits |
|----------------------------|---------|
| Science A I with Lab.....  | 4       |
| Science A II with Lab..... | 4       |
| Science B I with Lab.....  | 4       |
| Science B II with Lab..... | 4       |

## Mathematics Requirements (17 credits)

|                                   |         |
|-----------------------------------|---------|
| MATH1201                          | Credits |
| Calculus I.....                   | 4       |
| MATH2202                          |         |
| Calculus II.....                  | 4       |
| MATH2255                          |         |
| Discrete Structures.....          | 3       |
| MATH3220                          |         |
| Linear Algebra.....               | 3       |
| MATH3237                          |         |
| Probability and Statistics I..... | 3       |

## Humanities Requirements (15 credits)

|   |   |
|---|---|
| ENGR2210  |   |
| Technical Communications.....                                     | 3 |
| ENGR3000  |   |
| Modern Technologies: Principles,<br>Applications and Impacts..... | 3 |
| ENWR1101  |   |
| Academic Writing.....   | 3 |
| ENWR1102  |   |
| Academic Research and Writing.....                                | 3 |
| Humanities Elective.....  | 3 |

## University Requirements (8 credits)

|                                       |   |
|---------------------------------------|---|
| UNIV1001                              |   |
| Transitioning to University Life..... | 1 |
| UNIV1002                              |   |
| Preparing for Professional Life.....  | 1 |
| UNIV2001                              |   |
| Cross-cultural Perspectives.....      | 3 |
| UNIV2002                              |   |
| Global Issues.....                    | 3 |

Students must complete any two of the following concentrations: cybersecurity and information assurance, game and mobile application development, database management and information security administration.

Each concentration requires the successful completion of six courses (18 credits), of which three courses (9 credits) are already included in the computer science core requirements. The remaining three courses (9 credits) of each concentration are prescribed in the B.S. in computer science curriculum (see page 155).

Below, the courses for any two concentrations, e.g. concentration A and concentration B, are designated as concentrations A I, A II and A III, and concentrations B I, B II and B III.

## Concentration Requirements (18 credits)

|                          |   |
|--------------------------|---|
| Concentration A I.....   | 3 |
| Concentration A II.....  | 3 |
| Concentration A III..... | 3 |
| Concentration B I.....   | 3 |
| Concentration B II.....  | 3 |
| Concentration B III..... | 3 |

## Free Electives (10 credits)

Total....120

## Computer Science Graduate Requirements (21 credits)

Students will receive graduate credit for each of the graduate courses CSCI6603 Computer Architecture, CSCI6623 Database Systems and CSCI6638 Operating Systems in which they have received a grade of B or better.

In addition, students will take two more core courses:

|                                 |    |
|---------------------------------|----|
| CSCI6620                        |    |
| Software Engineering.....       | 3  |
| CSCI7645                        |    |
| Systems Programming.....        | 3  |
| and                             |    |
| Computer Science Electives..... | 15 |

The total combined degree is 141 credits (provided the student earns grades of B or better in the three graduate course taken as an undergraduate).

## B.S. in Computer Science/ M.S. in Management Information Systems Five-year Program

The University offers a five-year program that allows qualified students to attain a Bachelor of Science degree in computer science and a Master of Science degree in management information systems (MIS) with a combined course load of 141 credits, which is 9 credits less than that of the separate degrees.

Students are eligible to apply for the combined program after completing 60 undergraduate credits and obtaining a grade point ratio (GPR) of 3.00 or better in the first 15 credits of computer science courses. Applications should be submitted before the student has completed 27 credits of computer science courses. Upon completion of their undergraduate degrees, students who have maintained a 3.00 GPR in their computer science courses will be admitted to the graduate MIS program.

## B.S. in Computer Science/M.S. in Management Information Systems 120+21=141 credits

|  |         |
|--|---------|
| <b>Computer Science Undergraduate Core Requirements (36 credits)</b> | Credits |
| CSCI1201   |         |
| Computer Programming I.....  | 3       |
| CSCI1202   |         |
| Computer Programming II.....   | 3       |
| CSCI2215   |         |
| Introduction to Computer Science.....                                | 3       |
| CSCI2232   |         |
| Data Structures.....   | 3       |
| CSCI2247   |         |
| Assembly Language Programming.....                                   | 3       |
| CSCI3240   |         |
| Computer Networks.....   | 3       |
| CSCI3251   |         |
| Design of Software Systems.....                                      | 3       |
| CSCI3255   |         |
| Mathematical Foundations of<br>Computer Science.....                 | 3       |
| CSCI6603   |         |
| Computer Architecture*.....  | 3       |
| CSCI6623   |         |
| Database Systems*.....   | 3       |
| CSCI6638   |         |
| Operating Systems*.....  | 3       |
| ENGR2286   |         |
| Digital System Design.....   | 3       |

\*These courses can be applied to the M.S. degree, provided that the student earns a grade of B or better.

# Combined Degree Programs

B.S.E.E./M.S. in Computer Engineering

## Science Requirements (16 credits)

|                            | Credits |
|----------------------------|---------|
| Science A I with Lab.....  | 4       |
| Science A II with Lab..... | 4       |
| Science B I with Lab.....  | 4       |
| Science B II with Lab..... | 4       |

## Mathematics Requirements (17 credits)

|                                   |   |
|-----------------------------------|---|
| MATH1201                          |   |
| Calculus I.....                   | 4 |
| MATH2202                          |   |
| Calculus II.....                  | 4 |
| MATH2255                          |   |
| Discrete Structures.....          | 3 |
| MATH3220                          |   |
| Linear Algebra.....               | 3 |
| MATH3237                          |   |
| Probability and Statistics I..... | 3 |

## Humanities Requirements (15 credits)

|   |   |
|---|---|
| ENGR2210  |   |
| Technical Communications.....                                     | 3 |
| ENGR3000  |   |
| Modern Technologies: Principles,<br>Applications and Impacts..... | 3 |
| ENWR1101  |   |
| Academic Writing.....   | 3 |
| ENWR1102  |   |
| Academic Research and Writing.....                                | 3 |
| Humanities Elective.....  | 3 |

## University Requirements (8 credits)

|                                       |   |
|---------------------------------------|---|
| UNIV1001                              |   |
| Transitioning to University Life..... | 1 |
| UNIV1002                              |   |
| Preparing for Professional Life.....  | 1 |
| UNIV2001                              |   |
| Cross-cultural Perspectives.....      | 3 |
| UNIV2002                              |   |
| Global Issues.....                    | 3 |

## Business Requirements (6 credits)

|   |   |
|---|---|
| ACCT5012  |   |
| Financial Accounting: End-user<br>Applications..... | 2 |
| ECON5012  |   |
| Economic Analysis.....                              | 2 |
| MKTG5012  |   |
| Marketing Principles.....                           | 2 |

Students must complete any two of the following concentrations: cybersecurity and information assurance, game and mobile application development, database management and information security administration.

Each concentration requires the successful completion of six courses (18 credits), of which three courses (9 credits) are already included in the computer science core requirements. The remaining three courses (9 credits) of each concentration are prescribed in the B.S. in computer science curriculum (see page 155).

Below, the courses for any two concentrations, e.g. concentration A and concentration B, are designated as concentrations A I, A II and A III, and concentrations B I, B II and B III.

## Concentration Requirements (18 credits)

|                          | Credits |
|--------------------------|---------|
| Concentration A I.....   | 3       |
| Concentration A II.....  | 3       |
| Concentration A III..... | 3       |
| Concentration B I.....   | 3       |
| Concentration B II.....  | 3       |
| Concentration B III..... | 3       |

## Free Electives (4 credits)

Total.... 120

## Management Information Systems Graduate Requirements (21 credits)

Students will receive graduate credit for each of the graduate courses CSCI6603 Computer Architecture, CSCI6623 Database Systems and CSCI6638 Operating Systems in which they have received a grade of B or better. In addition, they will take five additional core courses:

|  |   |
|--|---|
| CSCI6720   |   |
| Management Information Systems.....                                      | 3 |
| CSCI6758   |   |
| Electronic Commerce.....   | 3 |
| CSCI7727   |   |
| Development of MIS I: Project<br>Management and Systems<br>Analysis..... | 3 |
| CSCI7791   |   |
| Information Systems for<br>Competitive Advantage.....                    | 3 |
| Graduate Electives.....  | 9 |

The total combined degree is 141 credits (provided the student earns grades of B or better in the three graduate course taken as an undergraduate).

## B.S.E.E./M.S. in Computer Engineering Five-year Program

Fairleigh Dickinson University offers a five-year program that allows qualified students to attain a Bachelor of Science in Electrical Engineering (B.S.E.E.) and a Master of Science (M.S.) degree in computer engineering with a combined degree load that is 9 credits less than that for the separate degrees.

Students must register for this program by their junior year and must have achieved a 2.75 cumulative grade point ratio.

A minimum of 128 credits is required for the B.S.E.E. degree and a minimum of 149 credits is required for the combined B.S.E.E./M.S. in computer engineering degrees.

## Requirements

### First Year

|  | Credits |
|--|---------|
| ENGR1301   |         |
| Engineering Practices, Graphics<br>and Design..... | 3       |
| ENWR1101   |         |
| Academic Writing.....                              | 3       |
| MATH1201   |         |
| Calculus I.....                                    | 4       |
| PHYS2201   |         |
| Physics Laboratory I.....                          | 1       |
| PHYS2203   |         |
| University Physics I.....                          | 3       |
| UNIV1001   |         |
| Transitioning to University Life.....              | 1       |
| Total.....   | 15      |

### 2nd Semester

|  |    |
|--|----|
| ENGR1204                                     |    |
| Programming Languages in<br>Engineering..... | 3  |
| ENGR2286                                     |    |
| Digital System Design.....                   | 3  |
| ENWR1102                                     |    |
| Academic Research and Writing.....           | 3  |
| MATH2202                                     |    |
| Calculus II.....                             | 4  |
| PHYS2202                                     |    |
| Physics Laboratory II.....                   | 1  |
| PHYS2204                                     |    |
| University Physics II.....                   | 3  |
| UNIV1002                                     |    |
| Preparing for Professional Life.....         | 1  |
| Total.....                                   | 18 |

# Combined Degree Programs

B.S.E.E./M.S.E.E.

## Second Year

| <b>3rd Semester</b>                   | Credits      |
|---------------------------------------|--------------|
| EENG2221                              |              |
| Signals and Systems I.....            | 4            |
| EENG2287                              |              |
| Microprocessor System Design I.....   | 3            |
| ENGR3200                              |              |
| Advanced Engineering Programming..... | 3            |
| MATH2210                              |              |
| Differential Equations.....           | 3            |
| UNIV2001                              |              |
| Cross-cultural Perspectives.....      | 3            |
|                                       | Total.....16 |

## 4th Semester

|   |              |
|---|--------------|
| EENG2222                                    |              |
| Signals and Systems II.....                 | 3            |
| EENG3288                                    |              |
| Microprocessor System Design II.....        | 3            |
| ENGR2210                                    |              |
| Technical Communications.....               | 3            |
| ENGR4221                                    |              |
| Engineering Statistics and Reliability..... | 3            |
| UNIV2002                                    |              |
| Global Issues.....                          | 3            |
|   | Total.....15 |

## Third Year

### 5th Semester

|  |              |
|--|--------------|
| EENG3223   |              |
| Linear Systems.....                                  | 3            |
| EENG3265   |              |
| Electronics I.....                                   | 3            |
| ENGR4210   |              |
| Managerial and Engineering<br>Economic Analysis..... | 3            |
| MATH2203   |              |
| Calculus III.....                                    | 3            |
| MECH2224   |              |
| Mechanical Engineering Topics.....                   | 3            |
|  | Total.....15 |

### 6th Semester

|   |              |
|---|--------------|
| CHEM1201  |              |
| General Chemistry I.....  | 3            |
| CHEM1203  |              |
| General Chemistry Laboratory I.....                               | 1            |
| EENG3224  |              |
| Digital Signal Processing.....                                    | 3            |
| EENG3266  |              |
| Electronics II.....   | 3            |
| ENGR3000  |              |
| Modern Technologies: Principles,<br>Applications and Impacts..... | 3            |
| ENGR3541  |              |
| Advanced Engineering Mathematics.....                             | 3            |
|   | Total.....16 |

## Fourth Year

| <b>7th Semester</b>                                    | Credits      |
|--|--------------|
| CSCI2232   |              |
| Data Structures.....                                   | 3            |
| EENG3244   |              |
| Electromagnetic Fields and Waves.....                  | 3            |
| EENG3267   |              |
| Electronics III.....                                   | 3            |
| EENG4260   |              |
| Preparation for Electrical<br>Engineering Project..... | 1            |
| EENG4342   |              |
| Data Communications and<br>Computer Networks.....      | 3            |
| EENG7725   |              |
| Automatic Control Systems I.....                       | 3            |
|  | Total.....16 |

### 8th Semester

|                                     |              |
|-------------------------------------|--------------|
| EENG4268                            |              |
| Electrical Engineering Project..... | 2            |
| EENG4341                            |              |
| Communication Systems.....          | 3            |
| EENG4347                            |              |
| Wireless Communication.....         | 3            |
| Technical Elective*.....            | 3            |
| Graduate Courses.....               | 6            |
|                                     | Total.....17 |

## Fifth Year

|                       |              |
|-----------------------|--------------|
| <b>9th Semester</b>   |              |
| Graduate Courses..... | 12           |
|                       | Total.....12 |

### 10th Semester

|  |             |
|--|-------------|
| Graduate Courses.....  | 9           |
|  | Total.....9 |
| Total Degree Requirements .....  | 149         |
| For full details, consult an adviser and/<br>or the <i>Graduate Studies Bulletin</i> . |             |

## B.S.E.E./M.S.E.E.

### Five-year Program

Fairleigh Dickinson University offers a five-year program that allows qualified students to attain a Bachelor of Science in Electrical Engineering (B.S.E.E.) degree and a Master of Science in Electrical Engineering (M.S.E.E.) degree with a combined degree load that is 9 credits less than that of the separate degrees.

Students must register for this program by their junior year and must have achieved at least a 2.75 cumulative grade point ratio.

A minimum of 128 credits is required for the B.S.E.E. degree and a minimum of 149 credits is required for the combined B.S.E.E./M.S.E.E. degrees.

### Requirements

#### First Year

| <b>1st Semester</b>                                | Credits       |
|--|---------------|
| ENGR1301   |               |
| Engineering Practices, Graphics<br>and Design..... | 3             |
| ENWR1101   |               |
| Academic Writing .....                             | 3             |
| MATH1201   |               |
| Calculus I.....                                    | 4             |
| PHYS2201   |               |
| Physics Laboratory I.....                          | 1             |
| PHYS2203   |               |
| University Physics I.....                          | 3             |
| UNIV1001   |               |
| Transitioning to University Life.....              | 1             |
|  | Total .....15 |

#### 2nd Semester

|  |              |
|--|--------------|
| ENGR1204                                     |              |
| Programming Languages in<br>Engineering..... | 3            |
| ENGR2286                                     |              |
| Digital System Design.....                   | 3            |
| ENWR1102                                     |              |
| Academic Research and Writing.....           | 3            |
| MATH2202                                     |              |
| Calculus II.....                             | 4            |
| PHYS2202                                     |              |
| Physics Laboratory II.....                   | 1            |
| PHYS2204                                     |              |
| University Physics II.....                   | 3            |
| UNIV1002                                     |              |
| Preparing for Professional Life.....         | 1            |
|  | Total.....18 |

\*Three credits must be selected from the technical electives list for the engineering curriculum, copies of which can be obtained through the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering. Choices must be approved by an academic adviser.

# Combined Degree Programs

B.S. in Hotel and Restaurant Management/M.S. in Hospitality Management Studies

## Second Year

### 3rd Semester

|                                       | Credits      |
|---------------------------------------|--------------|
| EENG2221                              |              |
| Signals and Systems I.....            | 4            |
| EENG2287                              |              |
| Microprocessor System Design I.....   | 3            |
| ENGR3200                              |              |
| Advanced Engineering Programming..... | 3            |
| MATH2210                              |              |
| Differential Equations.....           | 3            |
| UNIV2001                              |              |
| Cross-cultural Perspectives.....      | 3            |
|                                       | Total.....16 |

### 4th Semester

|   |              |
|---|--------------|
| EENG2222                                    |              |
| Signals and Systems II.....                 | 3            |
| EENG3288                                    |              |
| Microprocessor System Design II.....        | 3            |
| ENGR2210                                    |              |
| Technical Communications.....               | 3            |
| ENGR4221                                    |              |
| Engineering Statistics and Reliability..... | 3            |
| UNIV2002                                    |              |
| Global Issues.....                          | 3            |
|   | Total.....15 |

## Third Year

### 5th Semester

|  |              |
|--|--------------|
| EENG3223   |              |
| Linear Systems.....                                  | 3            |
| EENG3265   |              |
| Electronics I.....                                   | 3            |
| ENGR4210   |              |
| Managerial and Engineering<br>Economic Analysis..... | 3            |
| MATH2203   |              |
| Calculus III.....                                    | 3            |
| MECH2224   |              |
| Mechanical Engineering Topics.....                   | 3            |
|  | Total.....15 |

### 6th Semester

|                                     |   |
|-------------------------------------|---|
| CHEM1201                            |   |
| General Chemistry I.....            | 3 |
| CHEM1203                            |   |
| General Chemistry Laboratory I..... | 1 |
| EENG3266                            |   |
| Electronics II.....                 | 3 |

|   | Credits       |
|---|---------------|
| ENGR3000  |               |
| Modern Technologies: Principles,<br>Applications and Impacts..... | 3             |
| ENGR3341  |               |
| Advanced Engineering Mathematics.....                             | 3             |
| Technical Elective*.....  | 3             |
|   | Total .....16 |

## Fourth Year

### 7th Semester

|  | Credits       |
|--|---------------|
| EENG3244   |               |
| Electromagnetic Fields and Waves.....                  | 3             |
| EENG3267   |               |
| Electronics III.....                                   | 3             |
| EENG4260   |               |
| Preparation for Electrical<br>Engineering Project..... | 1             |
| EENG4342   |               |
| Data Communications and<br>Computer Networks.....      | 3             |
| EENG6633   |               |
| Digital Signal Processing.....                         | 3             |
| EENG7725   |               |
| Automatic Control Systems I.....                       | 3             |
|  | Total .....16 |

### 8th Semester

|                                     |               |
|-------------------------------------|---------------|
| EENG4268                            |               |
| Electrical Engineering Project..... | 2             |
| EENG4341                            |               |
| Communication Systems.....          | 3             |
| EENG4347                            |               |
| Wireless Communication.....         | 3             |
| Graduate Course.....                | 3             |
| Technical Electives*.....           | 6             |
|                                     | Total .....17 |

### 9th Semester

|                       |              |
|-----------------------|--------------|
| Graduate Courses..... | 12           |
|                       | Total.....12 |

### 10th Semester

|                                 |             |
|---------------------------------|-------------|
| Graduate Courses.....           | 9           |
|                                 | Total.....9 |
| Total Degree Requirements ..... | 149         |

For full details, consult an adviser and/or the *Graduate Studies Bulletin*.

\*Nine credits must be selected from the technical electives list for the engineering curriculum, copies of which can be obtained through the Lee Gildart and Oswald Haase School of Computer Sciences and Engineering. Choices must be approved by an academic adviser.

## B.S. in Hotel and Restaurant Management/M.S. in Hospitality Management Studies Five-year Program

### Recommended Course Sequencing

#### 1st Semester

|   | Credits      |
|---|--------------|
| ENGL1111  |              |
| Literature and Composition I<br>or<br>ENWR1101          |              |
| Academic Writing.....                                   | 3            |
| HRTM1101  |              |
| Career Orientation and Professional<br>Development..... | 1            |
| HRTM2500  |              |
| Professional Development Sequence<br>(PDS) Lab.....     | 0            |
| DSCI1234  |              |
| Mathematics for Business Decisions<br>or<br>MATH1141    |              |
| Introduction to Mathematical<br>Methods .....           | 3            |
| MIS1045   |              |
| Information Technology for Business<br>or<br>MIS1135    |              |
| Introduction to Computers .....                         | 3            |
| PSYC1103  |              |
| General Psychology I<br>or<br>PSYC1141                  |              |
| Psychology I.....                                       | 3            |
| UNIV1000  |              |
| Transitioning to University Life .....                  | 1            |
| Foreign Language Requirement* .....                     | 3            |
|   | Total.....17 |

#### 2nd Semester

|  |   |
|--|---|
| ACCT1131                               |   |
| Accounting I<br>or<br>ACCT2021         |   |
| Introductory Financial Accounting..... | 3 |

\*A student may satisfy this liberal arts requirement (foreign language) in one of four ways: 1) Recommend 6 credits of the same foreign language; 2) Language and culture courses: each course listed in the Undergraduate Studies Bulletin as "Language and Cultural Studies" will fulfill three credits toward this requirement; 3) English for Professional Success: International students can fulfill this requirement by the successful completion of the English for Professional Success (EPS) requirement; 4) Study abroad: Students can fulfill this requirement by taking six credits of an immersion course in any language followed by a University-approved intercultural travel experience.

# Combined Degree Programs

B.S. in Hotel and Restaurant Management/M.S. in Hospitality Management Studies

|   | Credits | <b>4th Semester</b>                        | Credits |                                      | Credits |
|---|---------|--|---------|--------------------------------------|---------|
| ENGL1112                                  |         | HRTM2100                                   |         | MIS2001                              |         |
| Literature and Composition II             |         | Professional Development Sequence          |         | Management Information Systems.....3 |         |
| or  |         | (PDS) Work Experience 2.....1              |         | Total.....17                         |         |
| ENWR1102 .....                            |         | HRTM2104                                   |         | <b>7th Semester</b>                  |         |
| Academic Research and Writing.....3       |         | The Hospitality Manager and Law.....2      |         | HRTM2500                             |         |
| HRTM1100                                  |         | HRTM2211                                   |         | Professional Development Sequence    |         |
| Professional Development Sequence         |         | Accounting for Hospitality Managers.....3  |         | (PDS) Lab.....0                      |         |
| (PDS) Work Experience 1.....1             |         | HRTM2235                                   |         | HRTM4107                             |         |
| HRTM1102                                  |         | Sustainability and Ecotourism.....3        |         | Concepts in Transportation and       |         |
| Professional Skill Development.....1      |         | HRTM2500                                   |         | Travel.....2                         |         |
| HRTM2500                                  |         | Professional Development Sequence          |         | HRTM4204                             |         |
| Professional Development                  |         | (PDS) Lab.....0                            |         | Property Management.....3            |         |
| Sequence (PDS) Lab.....0                  |         | HRTM3208                                   |         | HRTM7734                             |         |
| POLS1102                                  |         | Financial Management in the                |         | Global Marketing.....3               |         |
| Geography and World Issues .....          |         | Hospitality Industry .....                 |         | Graduate Elective .....              |         |
| 3   |         | 3  |         | Free Elective* .....                 |         |
| UNIV1002                                  |         | SPCH1155                                   |         | 1                                    |         |
| Preparing for Professional Life .....     |         | Public Speaking.....3                      |         | Total .....12                        |         |
| Foreign Language Requirement* .....       |         | UNIV2002                                   |         | <b>8th Semester</b>                  |         |
| Free Elective** .....                     |         | Global Issues.....3                        |         | HRTM2500                             |         |
| 3   |         | Total.....18                               |         | Professional Development Sequence    |         |
| Total.....18                              |         |  |         | (PDS) Lab.....0                      |         |
| <b>3rd Semester</b>                       |         | <b>5th Semester</b>                        |         | HRTM4108                             |         |
| COMM2101                                  |         | HRTM2210                                   |         | Global Issues in Hospitality         |         |
| Professional Communication.....3          |         | Sales and Marketing for Hospitality        |         | Management (seminar abroad).....2    |         |
| ECON1121                                  |         | Managers.....3                             |         | HRTM4109                             |         |
| Macroeconomics.....3                      |         | HRTM2500                                   |         | Hotel Operations Tactics             |         |
| HRTM2105                                  |         | Professional Development Sequence          |         | and Strategy.....3                   |         |
| Management Values and Professional        |         | (PDS) Lab.....0                            |         | HRTM7708                             |         |
| Standards.....2                           |         | HRTM3105                                   |         | Organizational Communication         |         |
| HRTM2211                                  |         | Managerial Challenges in the               |         | and Conflict Management.....3        |         |
| Accounting for Hospitality Managers ..... |         | Workplace.....1                            |         | HRTM7714                             |         |
| 3   |         | HRTM3108                                   |         | Advanced Human Resource              |         |
| HRTM2500                                  |         | Nutrition, Sanitation and Food Safety....3 |         | Management .....                     |         |
| Professional Development Sequence         |         | HRTM3203                                   |         | 3                                    |         |
| (PDS) Lab.....0                           |         | Food and Beverage Management.....3         |         | Free Elective.....3                  |         |
| DSCI2029                                  |         | HRTM3209                                   |         | Total.....14                         |         |
| Introduction to Statistics                |         | Human Resource Management .....            |         |                                      |         |
| or  |         | 3  |         | <b>9th Semester</b>                  |         |
| MATH1142                                  |         | Laboratory Science Elective .....          |         | HRTM7713                             |         |
| Introduction to Statistics .....          |         | 3  |         | Financial Management.....3           |         |
| 3   |         | Total.....16                               |         | HRTM7716                             |         |
| UNIV2001                                  |         | <b>6th Semester</b>                        |         | Service Management.....3             |         |
| Cross-cultural Perspectives.....3         |         | HRTM2500                                   |         | HRTM                                 |         |
| Total.....17                              |         | Professional Development Sequence          |         | Graduate Elective .....              |         |
|   |         | (PDS) Lab.....0                            |         | 3                                    |         |
|   |         | HRTM3100                                   |         | Total.....9                          |         |
|   |         | Professional Development Sequence          |         | <b>10th Semester</b>                 |         |
|   |         | (PDS) Work Experience 3.....1              |         | HRTM7715                             |         |
|   |         | HRTM3106                                   |         | Special Project .....                |         |
|   |         | The Manager and the Group:                 |         | 0                                    |         |
|   |         | Work Experience .....                      |         | HRTM7738                             |         |
|   |         | 1  |         | Advanced Graduate Practicum.....3    |         |
|   |         | HRTM3207                                   |         | HRTM7752                             |         |
|   |         | Lodging Operations and Revenue             |         | Research Methodology II.....3        |         |
|   |         | Management.....3                           |         | Total.....6                          |         |
|   |         | HRTM4280                                   |         |                                      |         |
|   |         | Domestic and International Tourism.....3   |         |                                      |         |
|   |         | HRTM7710                                   |         |                                      |         |
|   |         | Current Concepts in Leadership .....       |         |                                      |         |
|   |         | 3  |         |                                      |         |
|   |         | HRTM7751                                   |         |                                      |         |
|   |         | Research Methodology I .....               |         |                                      |         |
|   |         | 3  |         |                                      |         |

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\*\*Adviser-approved courses offered by Anthony J. Petrocelli College of Continuing Studies, Silberman College of Business and University College: Arts • Sciences • Professional Studies.

\*Adviser-approved courses offered by Anthony J. Petrocelli College of Continuing Studies, Silberman College of Business and University College: Arts • Sciences • Professional Studies.

# Combined Degree Programs

B.S. in Information Technology/M.S. in Computer Science

## B.S. in Information Technology/M.S. in Computer Science

### Five-year Program

Fairleigh Dickinson University offers a five-year program that allows qualified students to attain a Bachelor of Science (B.S.) degree in information technology and a Master of Science (M.S.) degree in computer science with a combined degree load that is 9 credits less than that for the separate degrees.

Students must register for this program by their junior year and must have achieved a cumulative grade point ratio of at least 3.00.

A minimum of 123 credits is required for the B.S. in information technology degree, and a minimum of 144 credits is required for the combined B.S. in information technology/M.S. in computer science degrees.

### Requirements

#### First Year

| 1st Semester                                   | Credits |
|--|---------|
| CSCI1105                                       |         |
| Survey of Computers and Computer Software..... | 3       |
| ENWR1101                                       |         |
| Academic Writing.....                          | 3       |
| INFO1101                                       |         |
| Computer Concepts and Technology.....          | 3       |
| MATH1105                                       |         |
| College Algebra.....                           | 4       |
| UNIV1001                                       |         |
| Transitioning to University Life.....          | 1       |
| Total.....                                     | 14      |

#### 2nd Semester

|                                      |    |
|--------------------------------------|----|
| ART1177                              |    |
| Introduction to Digital Media.....   | 3  |
| ENWR1102                             |    |
| Academic Research and Writing.....   | 3  |
| INFO1201                             |    |
| Information Technology.....          | 3  |
| MATH1107                             |    |
| Precalculus.....                     | 4  |
| UNIV1002                             |    |
| Preparing for Professional Life..... | 1  |
| Total.....                           | 14 |

#### Second Year

| 3rd Semester  | Credits |
|---|---------|
| EGTG2210  |         |
| Technical Communications.....                             | 3       |
| INFO2101  |         |
| Computer Programming for Information Technologists I..... | 3       |
| INFO2105  |         |
| Internet and Web Applications.....                        | 3       |
| UNIV2001  |         |
| Cross-cultural Perspectives.....                          | 3       |
| Laboratory Science Elective.....                          | 4       |
| Total.....  | 16      |

#### 4th Semester

|  |    |
|--|----|
| ENGR2286   |    |
| Digital System Design.....                                 | 3  |
| INFO2102   |    |
| Computer Programming for Information Technologists II..... | 3  |
| INFO2106   |    |
| Website Design and Management.....                         | 3  |
| UNIV2002   |    |
| Global Issues.....   | 3  |
| Laboratory Science Elective.....                           | 4  |
| Total.....   | 16 |

#### Third Year

| 5th Semester   | Credits |
|--|---------|
| CSCI2232   |         |
| Data Structures.....   | 3       |
| CSCI2247   |         |
| Assembly Language Programming or                               |         |
| EENG2287   |         |
| Microprocessor System Design I.....                            | 3       |
| ENGR3000   |         |
| Modern Technologies: Principles, Applications and Impacts..... | 3       |
| MATH2337   |         |
| Applied Statistics I.....                                      | 3       |
| Information Technology Elective.....                           | 3       |
| Total.....   | 15      |

#### 6th Semester

|                                      |    |
|--------------------------------------|----|
| CSCI6623                             |    |
| Database Systems.....                | 3  |
| CSCI6638                             |    |
| Operating Systems.....               | 3  |
| INFO3201                             |    |
| Human Computer Interface.....        | 3  |
| INFO3205                             |    |
| Digital Media Publishing.....        | 3  |
| Information Technology Elective..... | 3  |
| Total.....                           | 15 |

#### Fourth Year

| 7th Semester  | Credits |
|---|---------|
| CSCI6603  |         |
| Computer Architecture.....                                  | 3       |
| ENGR4210  |         |
| Managerial and Engineering Economic Analysis.....           | 3       |
| INFO4101  |         |
| Data Communications and Computer Networks I.....            | 3       |
| INFO4201  |         |
| Information Technology Needs Assessment and Management..... | 3       |
| MATH2255  |         |
| Discrete Structures.....                                    | 3       |
| Information Technology Elective.....                        | 3       |
| Total.....  | 18      |

#### 8th Semester

|  |    |
|--|----|
| CSCI3274                                     |    |
| Linux System Administration.....             | 3  |
| INFO4205                                     |    |
| Information Technology Capstone Project..... | 3  |
| INFO4410                                     |    |
| Foundations of Cybersecurity.....            | 3  |
| INFO4844                                     |    |
| Programming for the Internet.....            | 3  |
| Information Technology Elective.....         | 3  |
| Total.....                                   | 15 |

#### Fifth Year

##### 9th Semester

|  |    |
|--|----|
| CSCI6620                                 |    |
| Software Engineering.....                | 3  |
| Graduate Computer Science Electives..... | 9  |
| Total.....                               | 12 |

##### 10th Semester

|  |   |
|--|---|
| CSCI7645                                 |   |
| Systems Programming.....                 | 3 |
| Graduate Computer Science Electives..... | 6 |
| Total.....                               | 9 |

Total Degree Requirements.....144

For full details consult an adviser and/or the *Graduate Studies Bulletin*.

# Combined Degree Programs

B.S. in Biochemistry/Doctor of Pharmacy

## B.S. in Biochemistry/Doctor of Pharmacy Seven-year Program

(with FDU School of Pharmacy and Health Sciences, Fairleigh Dickinson University)

Fairleigh Dickinson University sophomores and high school seniors can apply to the the B.S. in biochemistry plus Pharm.D. combined program (3+4) offered by the School of Pharmacy and Health Sciences.

Sophomore applicants studying biochemistry (minimum of 30 credits, maximum of 60 credits) and maintaining a 3.30 grade point ratio must also have a grade of B- or better in all prerequisite college courses. The program is even more competitive for high school students seeking admission: students must have an SAT score of 1150 or higher (on the 1600 scale) and a 3.50 grade point average.

The program is structured so that students complete three years of undergraduate work in a “feeder” science major through the Maxwell Becton College of Arts and Sciences or University College: Arts • Sciences • Professional Studies before transitioning to the School of Pharmacy and Health Sciences to begin four years of graduate work. They ultimately achieve both a Bachelor of Science and Doctor of Pharmacy.

## Metropolitan Campus

A minimum of 120 credits for the B.S. degree; 100–104 of these are taken at the Metropolitan Campus in years 1–3 + 28 credits (to be approved by the department chair/director) in year 4 at FDU’s School of Pharmacy and Health Sciences. Students not accepted into FDU’s School of Pharmacy and Health Sciences have the option of switching out of the B.S. in biochemistry/Pharm.D. combined degree and into another concentration.

## B.S. in Biochemistry and Doctor of Pharmacy Combined Degree

| 1st Semester                        | Credits |
|-------------------------------------|---------|
| BIOL1251                            |         |
| General Biology I.....              | 3       |
| BIOL1253                            |         |
| Laboratory: General Biology I.....  | 1       |
| CHEM1201                            |         |
| General Chemistry I.....            | 3       |
| CHEM1203                            |         |
| General Chemistry Laboratory I..... | 1       |

|                                       | Credits |
|---------------------------------------|---------|
| ENWR1101                              |         |
| Academic Writing.....                 | 3       |
| MATH1201                              |         |
| Calculus I.....                       | 4       |
| UNIV1001                              |         |
| Transitioning to University Life..... | 1       |
| Total.....                            | 16      |

### 2nd Semester

|                                      |    |
|--------------------------------------|----|
| BIOL1252                             |    |
| General Biology II.....              | 3  |
| BIOL1254                             |    |
| Laboratory: General Biology II.....  | 1  |
| CHEM1202                             |    |
| General Chemistry II.....            | 3  |
| CHEM1204                             |    |
| General Chemistry Laboratory II..... | 1  |
| ENWR1102                             |    |
| Academic Research and Writing.....   | 3  |
| MATH2202                             |    |
| Calculus II.....                     | 4  |
| UNIV1002                             |    |
| Preparing for Professional Life..... | 1  |
| Total.....                           | 16 |

### 3rd Semester

|   |    |
|---|----|
| BIOL4405                                |    |
| Ethics in Science.....                  | 3  |
| CHEM2261                                |    |
| Organic Chemistry I.....                | 3  |
| CHEM2263                                |    |
| Organic Chemistry Laboratory I.....     | 2  |
| ENGL2201                                |    |
| Masterpieces of World Literature I..... | 3  |
| PHYS2201                                |    |
| Physics Laboratory I.....               | 1  |
| PHYS2203                                |    |
| University Physics I.....               | 3  |
| UNIV2001                                |    |
| Cross-cultural Perspectives.....        | 3  |
| Total.....                              | 18 |

### 4th Semester

|  |    |
|--|----|
| CHEM2262                                 |    |
| Organic Chemistry II.....                | 3  |
| CHEM2264                                 |    |
| Organic Chemistry Laboratory II.....     | 2  |
| ENGL2202                                 |    |
| Masterpieces of World Literature II..... | 3  |
| PHYS2202                                 |    |
| Physics Laboratory II.....               | 1  |
| PHYS2204                                 |    |
| University Physics II.....               | 3  |
| SPCH                                     |    |
| Oral Communication Elective*.....        | 3  |
| UNIV2002                                 |    |
| Global Issues.....                       | 3  |
| Total.....                               | 18 |

\*Requirements consist of a three-credit Speech course.

| 5th Semester   | Credits |
|--|---------|
| BIOL2203, BIOL2223   |         |
| Human Anatomy and Physiology I<br>(Lecture and Laboratory).....              | 4       |
| BIOL2210, BIOL2211   |         |
| Genetics (Lecture and Laboratory).....                                       | 4       |
| CHEM3241, CHEM3243   |         |
| Physical Chemistry I<br>(Lecture and Laboratory)<br>or<br>CHEM4233, CHEM4234 |         |
| Instrumental Analysis<br>(Lecture and Laboratory).....                       | 5       |
| CHEM3281   |         |
| Biochemistry I.....  | 3       |
| Total.....   | 16      |

### 6th Semester

|  |    |
|--|----|
| BIOL2204, BIOL2224   |    |
| Human Anatomy and Physiology II<br>(Lecture and Laboratory)..... | 4  |
| BIOL6733   |    |
| Enzymology.....  | 3  |
| CHEM3231, CHEM3232   |    |
| Analytical Chemistry<br>(Lecture and Laboratory).....            | 4  |
| BIOL4901   |    |
| Biology Seminar II.....  | 1  |
| or<br>CHEM3242, CHEM3244   |    |
| Physical Chemistry II<br>(Lecture and Laboratory).....           | 5  |
| MATH2337   |    |
| Applied Statistics I.....  | 3  |
| Total.....   | 15 |

### 7th Semester

|   |   |
|---|---|
| PHRM6100  |   |
| Foundations in Pharmaceutical<br>Science: Pharmacology,<br>Medicinal Chemistry,<br>Pharmacokinetics.....                                      | 4 |
| PHRM6101  |   |
| Foundations in Integrated<br>Pharmacotherapy I: An<br>Introduction to Pathophysiology,<br>Genetics, Microbiology and<br>Delivery of Care..... | 3 |
| PHRM6201  |   |
| Pharmaceutics I: Physical Pharmacy.....   | 3 |
| PHRM6211  |   |
| Pharmaceutical Calculations I.....  | 1 |
| PHRM6301  |   |
| Medical Communication and<br>Technical Writing.....   | 2 |
| PHRM6321  |   |
| Pharmacy Care Law and Ethics.....   | 3 |
| PHRM6401  |   |
| Professional Pharmacy Practice I:<br>Health Care Delivery.....  | 3 |



# Combined Degree Programs

B.S. in Biochemistry/Doctor of Pharmacy

| Credits  | Credits   | Credits   |
|--|---|---|
| PHRM6700<br>Beyond the Curriculum:<br>Foundations in Pharmacy<br>Education.....0<br>Total.....19   | PHRM7111<br>Integrated Pharmacotherapy V–VI:<br>Conceptual Connections and<br>Patient Care.....2<br>PHRM7112<br>Integrated Pharmacotherapy<br>VII–VIII: Conceptual<br>Connections and Patient Care.....2<br>PHRM7201<br>Pharmaceutical Dispensing and<br>Compounding .....1<br>PHRM7202<br>Pharmaceutics III: Sterile Products<br>and Biopharmaceuticals.....3<br>PHRM7301<br>Biostatistics.....2<br>PHRM7302<br>Epidemiology and Study Design<br>Evaluation.....3<br>PHRM7401<br>Professional Pharmacy Practice<br>III: Pharmaceutical Informatics<br>and Drug Information.....2<br>PHRM7501<br>Introductory Pharmacy Practice<br>Experience (IPPE) II: Institutional...3<br>PHRM7700<br>Beyond the Curriculum:<br>Expanding Horizons.....0<br>PHRM7701<br>Beyond the Curriculum: Expanding<br>Horizons .....1<br>PHRM8109<br>Integrated Pharmacotherapy IX:<br>Autoimmune Diseases, Rare<br>Diseases and Special Populations.....3<br>PHRM8110<br>Integrated Pharmacotherapy X:<br>Hematology and Oncology.....3<br>PHRM8111<br>Integrated Pharmacotherapy IX–X:<br>Conceptual Connections and<br>Patient Care .....2<br>PHRM8112<br>Integrated Pharmacotherapy I–X:<br>A Whole System Overview and<br>Effecting Patient Care .....2<br>PHRM8201<br>Pharmacogenomics and<br>Personalized Medicine.....2<br>PHRM8301<br>Pharmacoepidemiology,<br>Pharmacoeconomics and<br>Health Outcomes.....3<br>PHRM8302<br>Public Health and the Global<br>Mission of Pharmacy.....2 | PHRM8402<br>Professional Pharmacy Practice IV:<br>Pharmacy Leadership and<br>Management .....2<br>PHRM8700<br>Beyond the Curriculum/<br>Preparing Practitioners.....0<br>PHRM8701<br>Beyond the Curriculum/<br>Preparing Practitioners.....1<br>PHRM8900<br>Pharmacy Capstone.....2<br>PHRM9101<br>Advanced Pharmacy Practice<br>Experience (APPE) I: Community....5<br>PHRM9102<br>Advanced Pharmacy Practice<br>Experience (APPE) II: Institutional...5<br>PHRM9103<br>Advanced Pharmacy Practice<br>Experience (APPE) III:<br>Ambulatory Care.....5<br>PHRM9104<br>Advanced Pharmacy Practice<br>Experience (APPE) IV: Acute Care...5<br>PHRM9201<br>Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Community Practice I .....5<br>PHRM9203<br>Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Ambulatory Care I.....5<br>PHRM9205<br>Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Community Compounding I.....5<br>PHRM9207<br>Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Medication Therapy<br>Management I.....5<br>PHRM9209<br>Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>HIV/AIDS I.....5<br>PHRM9211<br>Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Home Infusion I.....5<br>PHRM9301<br>Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Hospital Practice I.....5<br>PHRM9303<br>Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Acute Care I.....5 |
| <b>8th Semester</b>  |   |   |
| PHRM6102<br>Integrated Pharmacotherapy II:<br>Gastrointestinal.....3<br>PHRM6103<br>Integrated Pharmacotherapy III:<br>Dermatology, Over-the-Counter<br>Remedies and Self Care.....3<br>PHRM6104<br>Integrated Pharmacotherapy IV:<br>Cardiology.....4<br>PHRM6111<br>Integrated Pharmacotherapy II–IV:<br>Conceptual Connections and<br>Patient Care .....2<br>PHRM6202<br>Pharmaceutics II: Dosage Forms<br>and Drug Delivery Technology.....3<br>PHRM6402<br>Professional Pharmacy Practice II:<br>Communication in Health Care.....2<br>PHRM6701<br>Beyond the Curriculum:<br>Foundations in Pharmacy<br>Education.....1<br>Total.....18 |   |   |
| <b>School of Pharmacy and Health Sciences Courses for All Undergraduate Majors Years 5 through 7</b>   |   |   |
| PHRM6501<br>Introductory Pharmacy Practice<br>Experience (IPPE) I: Community.....3<br>PHRM7105<br>Integrated Pharmacotherapy V:<br>Neurology, Psychiatry and<br>Anesthesiology.....4<br>PHRM7106<br>Integrated Pharmacotherapy VI:<br>Infectious Disease.....4<br>PHRM7107<br>Integrated Pharmacotherapy VII:<br>Pulmonary, Eye, Ear, Nose<br>and Throat.....3<br>PHRM7108<br>Integrated Pharmacotherapy VIII:<br>Endocrine, Urinary Tract,<br>Renal and Reproductive Health.....4   |   |   |

# Combined Degree Programs

B.S. in Biochemistry/Doctor of Pharmacy

| Credits |                                       | Credits |                                     | Credits |  |
|---------|---------------------------------------|---------|-------------------------------------|---------|--|
|         | PHRM9305                              |         | PHRM9507                            |         | CHEM1204                                   |
|         | Advanced Pharmacy Practice            |         | Advanced Pharmacy Practice          |         | General Chemistry Laboratory II.....1      |
|         | Experience (APPE) VI: Elective –      |         | Experience (APPE) VIII:             |         | ENGW1102                                   |
|         | Long Term Care I.....5                |         | Elective – Marketing I.....5        |         | Research Writing Workshop.....3            |
|         | PHRM9307                              |         | PHRM9509                            |         | MATH2202                                   |
|         | Advanced Pharmacy Practice            |         | Advanced Pharmacy Practice          |         | Calculus II.....4                          |
|         | Experience (APPE) VI: Elective –      |         | Experience (APPE) VIII:             |         | Total.....15                               |
|         | Infectious Disease I.....5            |         | Elective – Patient Advocacy I.....5 |         |  |
|         | PHRM9309                              |         | PHRM9511                            |         | <b>3rd Semester</b>                        |
|         | Advanced Pharmacy Practice            |         | Advanced Pharmacy Practice          |         | BIOL1205                                   |
|         | Experience (APPE) VI: Elective –      |         | Experience (APPE) VIII:             |         | Anatomy and Physiology I.....4             |
|         | Oncology I.....5                      |         | Elective – Health Care              |         | BIOL1207                                   |
|         | PHRM9311                              |         | Organization Management I.....5     |         | Lab: Anatomy and Physiology I.....0        |
|         | Advanced Pharmacy Practice            |         | PHRM9513                            |         | CHEM2261, CHEM2265                         |
|         | Experience (APPE) VI: Elective –      |         | Advanced Pharmacy Practice          |         | Organic Chemistry I.....3                  |
|         | Critical Care I.....5                 |         | Experience (APPE) VIII:             |         | CHEM2263                                   |
|         | PHRM9313                              |         | Elective – Informatics I.....5      |         | Organic Chemistry Laboratory II.....1      |
|         | Advanced Pharmacy Practice            |         | PHRM9515                            |         | PHYS2003, PHYS2023                         |
|         | Experience (APPE) VI: Elective –      |         | Advanced Pharmacy Practice          |         | General Physics with Calculus I.....4      |
|         | Cardiology I.....5                    |         | Experience (APPE) VIII:             |         | PHYS2013                                   |
|         | PHRM9315                              |         | Elective – Management I.....5       |         | Lab: General Physics with                  |
|         | Advanced Pharmacy Practice            |         | PHRM9517                            |         | Calculus I.....0                           |
|         | Experience (APPE) VI: Elective –      |         | Advanced Pharmacy Practice          |         | SPCH1107                                   |
|         | Behavioral Health I.....5             |         | Experience (APPE) VIII:             |         | Fundamentals of Speech.....3               |
|         | PHRM9401                              |         | Elective – Regulatory I.....5       |         | Total.....15                               |
|         | Advanced Pharmacy Practice            |         |                                     |         |  |
|         | Experience (APPE) VII: Elective –     |         |                                     |         | <b>4th Semester</b>                        |
|         | Drug Information I.....5              |         |                                     |         | BIOL1206                                   |
|         | PHRM9403                              |         |                                     |         | Anatomy and Physiology II.....4            |
|         | Advanced Pharmacy Practice            |         |                                     |         | BIOL1208                                   |
|         | Experience (APPE) VII: Elective –     |         |                                     |         | Lab: Anatomy and Physiology II.....0       |
|         | Medication Safety I.....5             |         |                                     |         | CHEM2262, CHEM2266                         |
|         | PHRM9405                              |         |                                     |         | Organic Chemistry II.....3                 |
|         | Advanced Pharmacy Practice            |         |                                     |         | CHEM2264                                   |
|         | Experience (APPE) VII: Elective –     |         |                                     |         | Lab: Organic Chemistry II.....1            |
|         | Managed Care I.....5                  |         |                                     |         | MATH1133                                   |
|         | PHRM9407                              |         |                                     |         | Applied Statistics.....3                   |
|         | Advanced Pharmacy Practice            |         |                                     |         | PHYS2004, PHYS2024                         |
|         | Experience (APPE) VII: Elective –     |         |                                     |         | General Physics with Calculus II.....4     |
|         | Specialty Pharmacy I.....5            |         |                                     |         | PHYS2014                                   |
|         | PHRM9409                              |         |                                     |         | Lab: General Physics with Calculus II....0 |
|         | Advanced Pharmacy Practice            |         |                                     |         | Total.....15                               |
|         | Experience (APPE) VII: Elective –     |         |                                     |         |  |
|         | Medical Device/Patient Safety I.....5 |         |                                     |         | <b>5th Semester</b>                        |
|         | PHRM9501                              |         |                                     |         | CHEM3241, CHEM3245                         |
|         | Advanced Pharmacy Practice            |         |                                     |         | Physical Chemistry I.....3                 |
|         | Experience (APPE) VIII:               |         |                                     |         | CHEM3243                                   |
|         | Elective – Public Health I.....5      |         |                                     |         | Lab: Physical Chemistry.....2              |
|         | PHRM9505                              |         |                                     |         | CHEM3281                                   |
|         | Advanced Pharmacy Practice            |         |                                     |         | Biochemistry I.....3                       |
|         | Experience (APPE) VIII:               |         |                                     |         | CHEM3389                                   |
|         | Elective – Industry I.....5           |         |                                     |         | Biochemistry Laboratory.....1              |
|         | PHRM9505                              |         |                                     |         | UNIV1002                                   |
|         | Advanced Pharmacy Practice            |         |                                     |         | Preparing for Professional Life.....1      |
|         | Experience (APPE) VIII:               |         |                                     |         | Language Course.....4                      |
|         | Elective – Research I.....5           |         |                                     |         | Total.....14                               |
|         |                                       |         |                                     |         |  |
|         |                                       |         |                                     |         | <b>6th Semester</b>                        |
|         |                                       |         |                                     |         | CHEM2221                                   |
|         |                                       |         |                                     |         | Analytical Chemistry.....4                 |
|         |                                       |         |                                     |         | CHEM2223                                   |
|         |                                       |         |                                     |         | Lab: Analytical Chemistry.....0            |

## Florham Campus

### **B.S. in Biochemistry and Doctor of Pharmacy Combined Degree\***

#### **1st Semester**

|                    |                                      |
|--------------------|--------------------------------------|
| BIOL1201, BIOL1211 | Biological Diversity.....4           |
| BIOL1203           | Lab: Biological Diversity.....0      |
| CHEM1201, CHEM1211 | General Chemistry I.....3            |
| CHEM1203           | General Chemistry Laboratory I.....1 |
| ENGW1101           | College Writing Workshop.....3       |
| MATH1203           | Calculus I.....4                     |
| UNIV1001           | Transitioning to College Life.....1  |
|                    | Total.....16                         |

#### **2nd Semester**

|                    |   |
|--------------------|---|
| BIOL1202, BIOL1212 | Introduction to Molecules, Cells<br>and Genes.....4     |
| BIOL1204           | Introduction to Molecules, Cells<br>and Genes Lab.....0 |
| CHEM1202, CHEM1212 | General Chemistry II.....3                              |

\*This is not American Chemical Society (ACS) certified.

# Combined Degree Programs

B.S. in Biochemistry/Doctor of Pharmacy

|   | Credits |
|---|---------|
| CHEM3242, CHEM3246<br>Physical Chemistry II.....  | 3       |
| CHEM3244<br>Physical Chemistry Laboratory II..... | 2       |
| CHEM3282<br>Biochemistry II.....                  | 3       |
| ECON2001<br>Introduction to Microeconomics.....   | 3       |
| Textual and Aesthetic Analysis.....               | 3       |
| Total.....  | 18      |

## 7th Semester

|  |    |
|--|----|
| PHRM6100<br>Foundations in Pharmaceutical<br>Science: Pharmacology,<br>Medicinal Chemistry,<br>Pharmacokinetics.....                                       | 4  |
| PHRM6101<br>Foundations in Integrated<br>Pharmacotherapy I: An<br>Introduction to Pathophysiology,<br>Genetics, Microbiology and<br>Delivery of Care ..... | 3  |
| PHRM6201<br>Pharmaceutics I: Physical Pharmacy.....  | 3  |
| PHRM6211<br>Pharmaceutical Calculations I.....   | 1  |
| PHRM6301<br>Medical Communication and<br>Technical Writing.....  | 2  |
| PHRM6321<br>Pharmacy Care Law and Ethics.....  | 3  |
| PHRM6401<br>Professional Pharmacy Practice I:<br>Health Care Delivery.....   | 3  |
| PHRM6700<br>Beyond the Curriculum:<br>Foundations in Pharmacy<br>Education.....  | 0  |
| Total.....   | 19 |

## 8th Semester

|  |   |
|--|---|
| PHRM6102<br>Integrated Pharmacotherapy II:<br>Gastrointestinal.....  | 3 |
| PHRM6103<br>Integrated Pharmacotherapy III:<br>Dermatology, Over-the-Counter<br>Remedies and Self Care ..... | 3 |
| PHRM6104<br>Integrated Pharmacotherapy IV:<br>Cardiology.....  | 4 |
| PHRM6111<br>Integrated Pharmacotherapy II-IV:<br>Conceptual Connections and<br>Patient Care.....             | 2 |
| PHRM6202<br>Pharmaceutics II: Dosage Forms<br>and Drug Delivery Technology .....                             | 3 |

|   | Credits |
|---|---------|
| PHRM6212<br>Pharmaceutical Calculations II.....                                     | 1       |
| PHRM6402<br>Professional Pharmacy Practice II:<br>Communication in Health Care..... | 2       |
| PHRM6701<br>Beyond the Curriculum:<br>Foundations in Pharmacy<br>Education.....     | 1       |
| Total.....  | 19      |

## School of Pharmacy and Health Sciences Courses for All Undergraduate Majors Years 5 through 7

|   |   |
|---|---|
| PHRM6501<br>Introductory Pharmacy Practice<br>Experience (IPPE) I: Community.....                               | 3 |
| PHRM7105<br>Integrated Pharmacotherapy V:<br>Neurology, Psychiatry and<br>Anesthesiology.....                   | 4 |
| PHRM7106<br>Integrated Pharmacotherapy VI:<br>Infectious Disease.....   | 4 |
| PHRM7107<br>Integrated Pharmacotherapy VII:<br>Pulmonary, Eye, Ear, Nose<br>and Throat.....                     | 3 |
| PHRM7108<br>Integrated Pharmacotherapy VIII:<br>Endocrine, Urinary Tract,<br>Renal and Reproductive Health..... | 4 |
| PHRM7111<br>Integrated Pharmacotherapy V-VI:<br>Conceptual Connections and<br>Patient Care.....                 | 2 |
| PHRM7112<br>Integrated Pharmacotherapy<br>VII-VIII: Conceptual<br>Connections and Patient Care.....             | 2 |
| PHRM7201<br>Pharmaceutical Dispensing and<br>Compounding.....   | 1 |
| PHRM7202<br>Pharmaceutics III: Sterile Products<br>and Biopharmaceuticals.....                                  | 3 |
| PHRM7301<br>Biostatistics.....  | 2 |
| PHRM7302<br>Epidemiology and Study Design<br>Evaluation.....  | 3 |
| PHRM7401<br>Professional Pharmacy Practice<br>III: Pharmaceutical Informatics<br>and Drug Information.....      | 2 |

|  | Credits |
|--|---------|
| PHRM7501<br>Introductory Pharmacy Practice<br>Experience (IPPE) II: Institutional....                            | 3       |
| PHRM7700<br>Beyond the Curriculum:<br>Expanding Horizons.....  | 0       |
| PHRM7701<br>Beyond the Curriculum: Expanding<br>Horizons .....   | 1       |
| PHRM8109<br>Integrated Pharmacotherapy IX:<br>Autoimmune Diseases, Rare<br>Diseases and Special Populations..... | 3       |
| PHRM8110<br>Integrated Pharmacotherapy X:<br>Hematology and Oncology.....  | 3       |
| PHRM8111<br>Integrated Pharmacotherapy IX-X:<br>Conceptual Connections and<br>Patient Care .....                 | 2       |
| PHRM8112<br>Integrated Pharmacotherapy I-X:<br>A Whole System Overview and<br>Effecting Patient Care .....       | 2       |
| PHRM8201<br>Pharmacogenomics and<br>Personalized Medicine.....   | 2       |
| PHRM8301<br>Pharmacoepidemiology,<br>Pharmacoeconomics and<br>Health Outcomes.....                               | 3       |
| PHRM8302<br>Public Health and the Global<br>Mission of Pharmacy.....   | 2       |
| PHRM8402<br>Professional Pharmacy Practice IV:<br>Pharmacy Leadership and<br>Management .....                    | 2       |
| PHRM8700<br>Beyond the Curriculum/<br>Preparing Practitioners.....   | 0       |
| PHRM8701<br>Beyond the Curriculum/<br>Preparing Practitioners.....   | 1       |
| PHRM8900<br>Pharmacy Capstone.....   | 2       |
| PHRM9101<br>Advanced Pharmacy Practice<br>Experience (APPE) I: Community.....                                    | 5       |
| PHRM9102<br>Advanced Pharmacy Practice<br>Experience (APPE) II: Institutional...5                                | 5       |
| PHRM9103<br>Advanced Pharmacy Practice<br>Experience (APPE) III:<br>Ambulatory Care.....                         | 5       |
| PHRM9104<br>Advanced Pharmacy Practice<br>Experience (APPE) IV: Acute Care...5                                   | 5       |

# Combined Degree Programs

B.S. in Biochemistry or Chemistry/Doctor of Pharmacy

|                                  | Credits |                                      | Credits |
|----------------------------------|---------|--------------------------------------|---------|
| PHRM9201                         |         | PHRM9401                             |         |
| Advanced Pharmacy Practice       |         | Advanced Pharmacy Practice           |         |
| Experience (APPE) V: Elective –  |         | Experience (APPE) VII: Elective –    |         |
| Community Practice I.....        | 5       | Drug Information I.....              | 5       |
| PHRM9203                         |         | PHRM9403                             |         |
| Advanced Pharmacy Practice       |         | Advanced Pharmacy Practice           |         |
| Experience (APPE) V: Elective –  |         | Experience (APPE) VII: Elective –    |         |
| Ambulatory Care I.....           | 5       | Medication Safety I.....             | 5       |
| PHRM9205                         |         | PHRM9405                             |         |
| Advanced Pharmacy Practice       |         | Advanced Pharmacy Practice           |         |
| Experience (APPE) V: Elective –  |         | Experience (APPE) VII: Elective –    |         |
| Community Compounding I.....     | 5       | Managed Care I.....                  | 5       |
| PHRM9207                         |         | PHRM9407                             |         |
| Advanced Pharmacy Practice       |         | Advanced Pharmacy Practice           |         |
| Experience (APPE) V: Elective –  |         | Experience (APPE) VII: Elective –    |         |
| Medication Therapy               |         | Specialty Pharmacy I.....            | 5       |
| Management I.....                | 5       | PHRM9409                             |         |
| PHRM9209                         |         | Advanced Pharmacy Practice           |         |
| Advanced Pharmacy Practice       |         | Experience (APPE) VII: Elective –    |         |
| Experience (APPE) V: Elective –  |         | Medical Device/Patient Safety I..... | 5       |
| HIV/AIDS I.....                  | 5       | PHRM9501                             |         |
| PHRM9211                         |         | Advanced Pharmacy Practice           |         |
| Advanced Pharmacy Practice       |         | Experience (APPE) VIII:              |         |
| Experience (APPE) V: Elective –  |         | Elective – Public Health I.....      | 5       |
| Home Infusion I.....             | 5       | PHRM9503                             |         |
| PHRM9301                         |         | Advanced Pharmacy Practice           |         |
| Advanced Pharmacy Practice       |         | Experience (APPE) VIII:              |         |
| Experience (APPE) VI: Elective – |         | Elective – Industry I.....           | 5       |
| Hospital Practice I.....         | 5       | PHRM9505                             |         |
| PHRM9303                         |         | Advanced Pharmacy Practice           |         |
| Advanced Pharmacy Practice       |         | Experience (APPE) VIII:              |         |
| Experience (APPE) VI: Elective – |         | Elective – Research I.....           | 5       |
| Acute Care I.....                | 5       | PHRM9507                             |         |
| PHRM9305                         |         | Advanced Pharmacy Practice           |         |
| Advanced Pharmacy Practice       |         | Experience (APPE) VIII:              |         |
| Experience (APPE) VI: Elective – |         | Elective – Marketing I.....          | 5       |
| Long Term Care I.....            | 5       | PHRM9509                             |         |
| PHRM9307                         |         | Advanced Pharmacy Practice           |         |
| Advanced Pharmacy Practice       |         | Experience (APPE) VIII:              |         |
| Experience (APPE) VI: Elective – |         | Elective – Patient Advocacy I.....   | 5       |
| Infectious Disease I.....        | 5       | PHRM9511                             |         |
| PHRM9309                         |         | Advanced Pharmacy Practice           |         |
| Advanced Pharmacy Practice       |         | Experience (APPE) VIII:              |         |
| Experience (APPE) VI: Elective – |         | Elective – Health Care               |         |
| Oncology I.....                  | 5       | Organization Management I.....       | 5       |
| PHRM9311                         |         | PHRM9513                             |         |
| Advanced Pharmacy Practice       |         | Advanced Pharmacy Practice           |         |
| Experience (APPE) VI: Elective – |         | Experience (APPE) VIII:              |         |
| Critical Care I.....             | 5       | Elective – Informatics I.....        | 5       |
| PHRM9313                         |         | PHRM9515                             |         |
| Advanced Pharmacy Practice       |         | Advanced Pharmacy Practice           |         |
| Experience (APPE) VI: Elective – |         | Experience (APPE) VIII:              |         |
| Cardiology I.....                | 5       | Elective – Management I.....         | 5       |
| PHRM9315                         |         | PHRM9517                             |         |
| Advanced Pharmacy Practice       |         | Advanced Pharmacy Practice           |         |
| Experience (APPE) VI: Elective – |         | Experience (APPE) VIII:              |         |
| Behavioral Health I.....         | 5       | Elective – Regulatory I.....         | 5       |

## **B.S. in Biochemistry or Chemistry/Doctor of Pharmacy** **Seven-year Program**

*(with Bernard J. Dunn School of Pharmacy, Shenandoah University)*

This accelerated, combined degree program provides qualified students the opportunity to complete a baccalaureate degree and a Doctor of Pharmacy degree in seven years, one year less than the normal span of eight years. The bachelor's degree (B.S. in chemistry or biochemistry) is awarded by Fairleigh Dickinson University and the Doctor of Pharmacy degree by Bernard J. Dunn School of Pharmacy, Shenandoah University, Winchester, Va.

Students are admitted to FDU as incoming freshmen or qualified transfer students. They may apply for the B.S. degree upon successful completion of six semesters at FDU, including the courses listed below, and the first year of study (three semesters) at Bernard J. Dunn School of Pharmacy, Shenandoah University. A maximum of 32 credits from the School of Pharmacy may be transferred toward completion of the B.S. degree at FDU.

### **Admission to the Combined Degree Program**

High school seniors who meet FDU's requirements for admission in the preprofessional program may apply for admission to the combined degree program.

All applicants for admission to the combined degree program must satisfy secondary school preparation in English, mathematics, biology, chemistry and physics. The high school grade point average (GPA) and rank in class, along with letters of recommendation from high school teachers, will be of primary importance in evaluating applicants' credentials. Applicants are required to submit scores in the verbal and mathematical components of the SAT.

### **Combined Degree Program Requirements**

While enrolled at FDU, students are required to follow the accelerated preprofessional curriculum in chemistry or biochemistry and are expected to maintain a minimum cumulative grade point ratio (GPR) of 3.25 or higher in all course work and a minimum of 3.40 in all science courses.

# Combined Degree Programs

B.S. in Biochemistry or Chemistry/Doctor of Pharmacy

## Qualifying for Enrollment at Bernard J. Dunn School of Pharmacy, Shenandoah University

Qualified students enrolled in the combined degree program will be guaranteed a seat at Bernard J. Dunn School of Pharmacy, Shenandoah University for training in pharmacy. To qualify, students must meet the following criteria:

- Completion of all FDU curriculum requirements, including the general education requirements and the degree program requirements for the major and all prerequisite courses required for admission to the School of Pharmacy. Students need to obtain a grade of 3.40 or higher in science courses;

- A GPR of 3.25 or higher;
- Submission of a satisfactory Pharmacy College Admission Test (PCAT) score (75 or higher) in a timely fashion (taken no later than October of their junior year);

- A score of 36 or higher (out of 40) for the interview at Bernard J. Dunn School of Pharmacy, Shenandoah University;

- Two favorable letters of recommendation from FDU faculty;

- One letter of support from a health care provider;

- Students currently enrolled at FDU who seek admission to the combined degree program must apply to the School of Natural Sciences, University College: Arts • Sciences • Professional Studies, Metropolitan Campus, Teaneck, N.J., or to the department of chemistry and pharmaceutical science, Florham Campus, Madison, N.J., prior to the completion of 60 credit hours at FDU or at least one year before the anticipated date of matriculation at Bernard J. Dunn School of Pharmacy, Shenandoah University; and

- Students enrolled in the combined degree program who decide to complete the B.S. degree at FDU prior to entering Bernard J. Dunn School of Pharmacy, Shenandoah University must make this known to their school director or department chair prior to the completion of 60 credits at FDU or at least one year before the anticipated date of matriculation at Bernard J. Dunn School of Pharmacy, Shenandoah University.

## Prepharmacy Curriculum

Under the provisions of the prepharmacy program, students matriculate in the School of Natural Sciences of University College: Arts • Sciences • Professional Studies for a minimum of 96 credits of course work leading to the B.S. in biochemistry or chemistry (preprofessional option). The curriculum is as follows:

| <b>1st Semester</b>                   | Credits             |
|---------------------------------------|---------------------|
| BIOL1251                              |                     |
| General Biology I.....                | 3                   |
| BIOL1253                              |                     |
| Laboratory: General Biology I.....    | 1                   |
| CHEM1201                              |                     |
| General Chemistry I.....              | 3                   |
| CHEM1203                              |                     |
| General Chemistry Laboratory I.....   | 1                   |
| ENWR1101                              |                     |
| Academic Writing.....                 | 3                   |
| MATH1201                              |                     |
| Calculus I.....                       | 4                   |
| UNIV1001                              |                     |
| Transitioning to University Life..... | 1                   |
|                                       | <b>Total.....16</b> |

## 2nd Semester

|                                      |                     |
|--------------------------------------|---------------------|
| BIOL1252                             |                     |
| General Biology II.....              | 3                   |
| BIOL1254                             |                     |
| Laboratory: General Biology II.....  | 1                   |
| CHEM1202                             |                     |
| General Chemistry II.....            | 3                   |
| CHEM1204                             |                     |
| General Chemistry Laboratory II..... | 1                   |
| ENWR1102                             |                     |
| Academic Research and Writing.....   | 3                   |
| MATH2202                             |                     |
| Calculus II.....                     | 4                   |
| UNIV1002                             |                     |
| Preparing for Professional Life..... | 1                   |
|                                      | <b>Total.....16</b> |

## 3rd Semester

|   |                     |
|---|---------------------|
| CHEM2261                                |                     |
| Organic Chemistry I.....                | 3                   |
| CHEM2263                                |                     |
| Organic Chemistry Laboratory I.....     | 2                   |
| ENGL2201                                |                     |
| Masterpieces of World Literature I..... | 3                   |
| PHYS2201                                |                     |
| Physics Laboratory I.....               | 1                   |
| PHYS2203                                |                     |
| University Physics I.....               | 3                   |
| UNIV2001                                |                     |
| Cross-cultural Perspectives.....        | 3                   |
|   | <b>Total.....15</b> |

## 4th Semester

|  | Credits             |
|--|---------------------|
| CHEM2262                                 |                     |
| Organic Chemistry II.....                | 3                   |
| CHEM2264                                 |                     |
| Organic Chemistry Laboratory II.....     | 2                   |
| ENGL2202                                 |                     |
| Masterpieces of World Literature II..... | 3                   |
| PHYS2202                                 |                     |
| Physics Laboratory II.....               | 1                   |
| PHYS2204                                 |                     |
| University Physics II.....               | 3                   |
| UNIV2002                                 |                     |
| Global Issues.....                       | 3                   |
|  | <b>Total.....15</b> |

## 5th Semester

|                                       |                     |
|---------------------------------------|---------------------|
| BIOL4405                              |                     |
| Ethics in Science.....                | 3                   |
| CHEM3241                              |                     |
| Physical Chemistry I*.....            | 3                   |
| CHEM3243                              |                     |
| Physical Chemistry Laboratory I*..... | 2                   |
| CHEM3281                              |                     |
| Biochemistry I.....                   | 3                   |
| Advanced Mathematics Course.....      | 3                   |
|                                       | <b>Total.....14</b> |

## 6th Semester

|   |                     |
|---|---------------------|
| BIOL6733                                |                     |
| Enzymology.....                         | 3                   |
| CHEM3242                                |                     |
| Physical Chemistry II**.....            | 2                   |
| CHEM3244                                |                     |
| Physical Chemistry Laboratory II**..... | 2                   |
| Speech Course.....                      | 3                   |
| Microbiology Course.....                | 4                   |
|   | <b>Total.....14</b> |

\*May be replaced by CHEM3251, CHEM3252 Analytical Chemistry.

\*\*May be replaced by CHEM4233 Instrumental Analysis.

# Combined Degree Programs

B.S. in Biology/Doctor of Chiropractic

## B.S. in Biology/Doctor of Chiropractic Six-year, Four-month Program

This accelerated, combined degree program enables students to earn both baccalaureate and Doctor of Chiropractic degrees in just six years and four months — a full year less than the normal study time of seven years and four months. Students can choose to attend undergraduate classes on either of Fairleigh Dickinson University's New Jersey campuses.

The bachelor's degree is awarded by the University and the Doctor of Chiropractic degree is awarded by a participating Council on Chiropractic Education (CCE)-accredited Colleges of Chiropractic. To date, the University has affiliations with New York Chiropractic College, Seneca Falls, N.Y.; Life Chiropractic College West, San Lorenzo, Calif.; Logan College of Chiropractic, Chesterfield, Mo.; Palmer College of Chiropractic, Davenport, Iowa; and Western States Chiropractic College, Portland, Ore.

Students are admitted into FDU's combined degree program as incoming freshmen or qualified transfer students. The B.S. degree is awarded after the students completes six semesters (three years) at FDU (including the courses listed on the next pages or their approved equivalent), completes the first two trimesters of study at a participating chiropractic college with grades of C or better and is accepted into the third trimester. Up to 32 credits accepted in transfer toward completion of B.S. degree requirements will be selected from appropriate graduate-level courses offered by a participating chiropractic college.

### Specific Course Requirements

#### Metropolitan Campus

Under the provisions of the prechiropractic program on the Metropolitan Campus, Teaneck, New Jersey, students matriculate in the School of Natural Sciences, University College: Arts • Sciences • Professional Studies for a minimum of 99 credits of course work leading to the B.S. in biology (preprofessional degree option), including the following courses:

### Liberal Arts and Humanities Requirements

|   | Credits |
|---|---------|
| CSCI1105  |         |
| Survey of Computers and<br>Computer Software..... | 3       |
| ENGL2201  |         |
| Masterpieces of World Literature I.....           | 3       |
| ENGL2202  |         |
| Masterpieces of World Literature II.....          | 3       |
| ENWR1101  |         |
| Academic Writing .....                            | 3       |
| ENWR1102  |         |
| Academic Research and Writing.....                | 3       |
| UNIV1001  |         |
| Transitioning to University Life.....             | 1       |
| UNIV1002  |         |
| Preparing for Professional Life.....              | 1       |
| UNIV2001  |         |
| Cross-cultural Perspectives .....                 | 3       |
| UNIV2002  |         |
| Global Issues .....                               | 3       |
| Fine Arts Elective.....                           | 2       |
| Humanities Electives.....                         | 6       |
| Total.....  | 36      |

### Recommended Course Sequence

#### 1st Semester

|                                       |    |
|---------------------------------------|----|
| BIOL1251                              |    |
| General Biology I.....                | 3  |
| BIOL1253                              |    |
| Laboratory: General Biology I.....    | 1  |
| CHEM1201                              |    |
| General Chemistry I.....              | 3  |
| CHEM1203                              |    |
| General Chemistry Laboratory I.....   | 1  |
| ENWR1101                              |    |
| Academic Writing.....                 | 3  |
| UNIV1001                              |    |
| Transitioning to University Life..... | 1  |
| Total.....                            | 12 |

#### 2nd Semester

|                                       |    |
|---------------------------------------|----|
| BIOL1252                              |    |
| General Biology II.....               | 3  |
| BIOL1254                              |    |
| Laboratory: General Biology II.....   | 1  |
| CHEM1202                              |    |
| General Chemistry II.....             | 3  |
| CHEM1204                              |    |
| General Chemistry Laboratory II.....  | 1  |
| ENWR1102                              |    |
| Academic Research and Writing.....    | 3  |
| UNIV1002                              |    |
| Preparing for Professional Life ..... | 1  |
| Mathematics Sequence.....             | 4  |
| Total.....                            | 16 |

#### 3rd Semester

|   | Credits |
|---|---------|
| BIOL2150, BIOL2250  |         |
| Ecology and Field Biology<br>(Lecture and Laboratory)           |         |
| or  |         |
| MBIO1209, MBIO1219  |         |
| Introduction to Marine Biology<br>(Lecture and Laboratory)..... | 4       |
| CHEM2261  |         |
| Organic Chemistry I.....  | 3       |
| CHEM2263  |         |
| Organic Chemistry Laboratory I.....                             | 2       |
| ENGL2201  |         |
| Masterpieces of World Literature I.....                         | 3       |
| Mathematics Sequence .....                                      | 4       |
| Total.....  | 16      |

#### 4th Semester

|  |    |
|--|----|
| BIOL2210, BIOL2211                       |    |
| Genetics (Lecture and Laboratory).....   | 4  |
| BIOL2300                                 |    |
| Experimental Design.....                 | 3  |
| CHEM2262                                 |    |
| Organic Chemistry II.....                | 3  |
| CHEM2264                                 |    |
| Organic Chemistry Laboratory II.....     | 2  |
| ENGL2202                                 |    |
| Masterpieces of World Literature II..... | 3  |
| UNIV2002                                 |    |
| Global Issues.....                       | 3  |
| Total.....                               | 18 |

#### 5th Semester

|   |    |
|---|----|
| BIOL2237, BIOL2239  |    |
| Human Structure and Function<br>(Lecture and Laboratory)..... | 4  |
| BIOL3225, BIOL3226  |    |
| General Microbiology<br>(Lecture and Laboratory).....         | 4  |
| BIOL4900  |    |
| Biology Seminar I.....  | 1  |
| PHYS2201  |    |
| Physics Laboratory I.....                                     | 1  |
| PHYS2203  |    |
| University Physics I.....                                     | 3  |
| UNIV2001  |    |
| Cross-cultural Perspectives.....                              | 3  |
| Total.....  | 16 |

#### 6th Semester

|   |    |
|---|----|
| BIOL4240, BIOL4241                                      |    |
| Molecular Cell Biology<br>(Lecture and Laboratory)..... | 4  |
| BIOL4405  |    |
| Ethics in Science.....                                  | 3  |
| CHEM3281  |    |
| Biochemistry I.....                                     | 3  |
| PHYS2202  |    |
| Physics Laboratory II.....                              | 1  |
| PHYS2204  |    |
| University Physics II.....                              | 3  |
| Oral Communication Elective.....                        | 3  |
| Total.....  | 17 |

# Combined Degree Programs

B.S. in Biochemistry or Biology or Chemistry/Doctor of Dental Medicine

## Florham Campus

Under the provisions of the prechiropractic program at the Florham Campus, Madison, New Jersey, students matriculate in the department of biological and allied health sciences, Maxwell Becton College of Arts and Sciences, for a minimum of 97 credits of course work leading to the B.S. in biology (preprofessional degree option), including the following courses:

| <b>Biology Requirements</b>  | Credits |
|--|---------|
| BIOL1201, BIOL1205<br>Biological Diversity<br>(Lecture and Laboratory).....  | 4       |
| BIOL1202, BIOL1204<br>Introduction to Molecules, Cells<br>and Genes (Lecture and<br>Laboratory).....                             | 4       |
| BIOL2003, BIOL2004<br>Cell Biology (Lecture and Laboratory)...   | 4       |
| BIOL3253, BIOL3254<br>Comparative Anatomy<br>(Lecture and Laboratory).....   | 4       |
| BIOL3256, BIOL3257<br>Genetics (Lecture and Laboratory).....   | 4       |
| BIOL3337, BIOL3327<br>General Physiology<br>(Lecture and Laboratory).....  | 4       |
| <b>Cognate Requirements<br/>(Chemistry, Mathematics, Physics)</b>  |         |
| CHEM1201, CHEM1202<br>General Chemistry I, II.....   | 6       |
| CHEM1203, CHEM1204<br>General Chemistry Laboratory I, II.....  | 2       |
| CHEM2261, CHEM2262<br>Organic Chemistry I, II.....   | 6       |
| CHEM2263, CHEM2264<br>Organic Chemistry Laboratory I, II.....  | 2       |
| MATH1107<br>Precalculus.....   | 4       |
| MATH1203<br>Calculus I.....  | 4       |
| <b>Students must complete the general<br/>education course plan (see page 55) as<br/>well, including these specific classes:</b> |         |
| PHIL1440<br>Biomedical Ethics.....   | 3       |
| SPCH1107<br>Fundamentals of Speech<br>or   |         |
| COMM2009<br>Professional Communications.....   | 3       |

## B.S. in Biochemistry or Biology or Chemistry/Doctor of Dental Medicine Eight-year Program

(with Lake Erie College of Osteopathic  
Medicine, School of Dental Medicine)

Lake Erie College of Osteopathic Medicine, School of Dental Medicine offers the D.M.D. degree through a full-time, four-year pathway at its campus in Bradenton, Fla. The curriculum consists of two years of basic science and preclinical instruction delivered through case-based, small-group problem-based learning sessions, as well as lectures, laboratories and introductory clinical experiences. Years three and four offer primarily hands-on, clinical experiences (<http://lecom.edu/school-dental-medicine.php>).

These combined degree programs provide qualified students the opportunity to complete a baccalaureate degree and a Doctor of Dental Medicine (D.M.D.) degree in eight years. The bachelor's degree (B.S. in biology/biochemistry/chemistry) is awarded by Fairleigh Dickinson University and the doctoral degree (D.M.D.) by Lake Erie College of Osteopathic Medicine (LECOM) – School of Dental Medicine. Through these Early Acceptance Programs, FDU undergraduate students are enrolled jointly by Fairleigh Dickinson University and by LECOM. Once recommended by Fairleigh Dickinson University, LECOM will interview the students prior to their enrollment at Fairleigh Dickinson University or within the first two years of being properly enrolled in the program. Students interviewing successfully will be offered a provisional acceptance to LECOM's Doctor of Dental Medicine program.

The "4+4" track is comprised of two phases. Phase I consists of four years of undergraduate education at Fairleigh Dickinson University and completion of the B.S. in biochemistry, biology or chemistry degree. Phase II consists of four years of dental school education at LECOM and its associated clinical training sites. Upon meeting the criteria for final acceptance, students will matriculate at the LECOM Bradenton, Fla, campus.

Each academic year, a maximum combined total of five students will be accepted by LECOM into Phase II of the Early Acceptance Program from each campus of Fairleigh Dickinson University. Provisionally accepted students may not apply to any other medical school. Application to

another medical school will result in the loss of the student's provisional acceptance.

## Admission to the Combined Degree Programs

High school seniors with a combined SAT score of 1170 (ACT score of 26) and a grade point average (GPA) of 3.50 or better may apply for admission to the combined degree programs. All applicants for admission to the combined degree programs must satisfy secondary-school preparation in English, mathematics, biology, chemistry and physics. The high school GPA and rank in class, along with letters of recommendation from high school teachers, will be of primary importance in evaluating the applicant's credentials. Applicants are required to submit scores in the verbal and the mathematical components of SAT.

## Combined Degree Program Requirements

While enrolled at FDU, students are required to follow the preprofessional curriculum in one of the sciences (biology, biochemistry or chemistry). They are expected to maintain a minimum cumulative grade point ratio of 3.00 or higher in all course work and in science courses.

## Qualifying for Enrollment at LECOM School of Dental Medicine

Qualified students enrolled in the combined degree programs will be accepted into Phase II if they meet the following criteria:

- Completion of all FDU curriculum requirements, including including the general education requirements and the degree program requirements for the major and all prerequisite courses required for admission to LECOM School of Dental Medicine. Students need to maintain a cumulative grade point ratio (CGPR) of 3.40 or higher in prerequisite courses with no grade lower than C in any of them and a cumulative overall science GPR of 3.20;
- A GPR of 3.40 or higher;
- An academic index score may be factored into admission decision.
- No reduced course load will be accepted. No summer courses will be accepted except in the case of scheduling conflicts;

# Combined Degree Programs

B.S. in Biology/Doctor of Dental Medicine

- Submission of a satisfactory Dental Admission Test (DAT) score (established by LECOM at the time of entry into the Early Acceptance Program) in a timely fashion; and

- Full-time students currently enrolled at FDU who seek admission to the combined degree programs must apply to the School of Natural Sciences, University College: Arts • Sciences • Professional Studies, Metropolitan Campus, Teaneck, N.J., or to the department of biological and allied health sciences, Florham Campus, Madison, N.J., prior to February 1 of their sophomore year.

## Predental Curricula

Students enrolled in the 4+4 years Early Acceptance Program will follow FDU's curricula for B.S. in sciences (for biochemistry, see pages 65 and 140; for biology, see pages 66 and 142; or for chemistry, see pages 68 and 145).

Under the provisions of the predental combined program, students matriculate in either University College: Arts • Sciences • Professional Studies or Maxwell Becton College of Arts and Sciences for a minimum of 96 credits of course work leading to the B.S. in one of the sciences (biochemistry, biology, chemistry).

## B.S. in Biology/Doctor of Dental Medicine Seven-year Program

(with Rutgers School of Dental Medicine)

Students accepted into this program will spend their first three years at FDU. The following four years will be spent at the Rutgers School of Dental Medicine (RSDM). Following successful completion of the first year of study at RSDM the student will be awarded a B.S. degree by FDU.

### Admission to the Program

Qualified students who have completed their first three semesters of study achieving a 3.50 cumulative grade point ratio at FDU may apply. Applicants must have had secondary school preparation in English, mathematics, biology, chemistry and physics. Letters of recommendation from high school teachers also are required.

Following evaluation of applications by the admissions office, the Joint Admissions Committee will decide which applicants to interview at FDU and RSDM. The interview at RSDM will be conducted by a member of the RSDM Admissions Committee. The final decision will be made by the Joint Admissions Committee following a review of the interviewers' comments.

### Final Admission to RSDM

Final admission into the Rutgers School of Dental Medicine is dependent on satisfactory completion of the following:

1. 98 credits as listed on this page at University College: Arts • Sciences • Professional Studies or 98 credits as listed on page 244 at the Maxwell Becton College of Arts and Sciences.
2. A minimum grade point ratio of 3.50 and a minimum grade of B in each of the science courses required for admission to RSDM. There shall be no final grade of "D", "F" or "I" in any course required for admission to RSDM, appearing on the student's transcript.
3. A satisfactory score on the Dental Aptitude Test must be submitted prior to admission to RSDM.
4. A recommendation by four faculty members, including the chair of the department of biological and allied health sciences at the Florham Campus, Madison, New Jersey, or the director of the School of Natural Sciences at the Metropolitan Campus, Teaneck, New Jersey, and the pre-

professional adviser is required. FDU students wishing to participate in the program must apply in writing to the preprofessional adviser no later than completion of 60 credits at FDU.

5. Participation in any orientation programs required by RSDM.

6. Final entrance into the D.M.D. program is contingent on satisfactory performance in all six semesters at FDU, notwithstanding any prior offer of admission.

7. Further information can be obtained from the Advisement Office for Graduate and Professional Studies at the Florham Campus, Madison, New Jersey, or the Graduate School and Professional Studies Advisement Center at the Metropolitan Campus, Teaneck, New Jersey.

### Specific Course Requirements

The course requirements to be followed at Maxwell Becton College of Arts and Sciences at the Florham Campus, Madison, New Jersey, or University College: Arts • Sciences • Professional Studies at the Metropolitan Campus, Teaneck, New Jersey, are found on this and the following page.

#### Florham Campus

| <b>Biology Requirements</b>  | Credits |
|--|---------|
| BIOL1201, BIOL1203   |         |
| Biological Diversity<br>(Lecture and Laboratory).....                          | 4       |
| BIOL1202, BIOL1204   |         |
| Introduction to Molecules, Cells<br>and Genes (Lecture and<br>Laboratory)..... | 4       |
| BIOL2003, BIOL2004   |         |
| Cell Biology (Lecture and Laboratory)...                                       | 4       |
| BIOL3253, BIOL3254   |         |
| Comparative Anatomy<br>(Lecture and Laboratory).....                           | 4       |
| BIOL3256, BIOL3257   |         |
| Genetics (Lecture and Laboratory).....   | 4       |
| BIOL3337, BIOL3327   |         |
| General Physiology<br>(Lecture and Laboratory).....                            | 4       |

#### Cognate Requirements (Chemistry, Mathematics, Physics)

|   |   |
|---|---|
| CHEM1201, CHEM1202                      |   |
| General Chemistry I, II.....            | 6 |
| CHEM1203, CHEM1204                      |   |
| General Chemistry Laboratory I, II..... | 2 |
| CHEM2261, CHEM2262                      |   |
| Organic Chemistry I, II.....            | 6 |



# Combined Degree Programs

B.S. in Biology/Medical Doctor

|   | Credits |
|---|---------|
| CHEM2263, CHEM2264<br>Organic Chemistry Laboratory I, II.....         | 2       |
| CHEM3281, CHEM3389<br>Biochemistry I (Lecture and<br>Laboratory)..... | 4       |
| MATH1107<br>Precalculus.....  | 4       |
| MATH1133<br>Applied Statistics.....                                   | 3       |
| MATH1203<br>Calculus I.....   | 4       |

**Students must complete the general education course plan (see page 55) as well, including these specific classes:**

|  |   |
|--|---|
| PHIL1440<br>Biomedical Ethics.....           | 3 |
| SPCH1107<br>Fundamentals of Speech<br>or     |   |
| COMM2009<br>Professional Communications..... | 3 |

## Metropolitan Campus

### 1st Semester

|  |    |
|--|----|
| BIOL1251, BIOL1253<br>General Biology I<br>(Lecture and Laboratory)..... | 4  |
| CHEM1201<br>General Chemistry I.....                                     | 3  |
| CHEM1203<br>General Chemistry Laboratory I.....                          | 1  |
| ENWR1101<br>Academic Writing.....  | 3  |
| UNIV1001<br>Transitioning to University Life.....                        | 1  |
| Total.....   | 12 |

### 2nd Semester

|   |    |
|---|----|
| BIOL1252, BIOL1254<br>General Biology II<br>(Lecture and Laboratory)..... | 4  |
| CHEM1202<br>General Chemistry II.....                                     | 3  |
| CHEM1204<br>General Chemistry Laboratory II.....                          | 1  |
| ENWR1102<br>Academic Research and Writing.....                            | 3  |
| UNIV1002<br>Preparing for Professional Life.....                          | 1  |
| Mathematics Sequence.....   | 4  |
| Total.....  | 16 |

### 3rd Semester

|  |   |
|--|---|
| BIOL2250, BIOL2150<br>Ecology and Field Biology<br>(Lecture and Laboratory)..... | 4 |
| CHEM2261<br>Organic Chemistry I.....   | 3 |

|   | Credits |
|---|---------|
| CHEM2263<br>Organic Chemistry Laboratory I.....     | 2       |
| ENGL2201<br>Masterpieces of World Literature I..... | 3       |
| Mathematics Sequence.....                           | 4       |
| Total.....  | 16      |

### 4th Semester

|  |    |
|--|----|
| BIOL2210, BIOL2211<br>Genetics (Lecture and Laboratory)..... | 4  |
| BIOL2300<br>Experimental Design.....                         | 3  |
| CHEM2262<br>Organic Chemistry II.....                        | 3  |
| CHEM2264<br>Organic Chemistry Laboratory II.....             | 2  |
| ENGL2202<br>Masterpieces of World Literature II.....         | 3  |
| UNIV2002<br>Global Issues.....                               | 3  |
| Total.....   | 18 |

### 5th Semester

|   |    |
|---|----|
| BIOL2237, BIOL2239<br>Human Structure and Function<br>(Lecture and Laboratory)..... | 4  |
| BIOL3225, BIOL3226<br>General Microbiology<br>(Lecture and Laboratory).....         | 4  |
| BIOL4900<br>Biology Seminar I.....  | 1  |
| PHYS2201<br>Physics Laboratory I.....   | 1  |
| PHYS2203<br>University Physics I.....   | 3  |
| UNIV2001<br>Cross-cultural Perspectives.....  | 3  |
| Total.....  | 16 |

### 6th Semester

|   |    |
|---|----|
| BIOL4240, BIOL4241<br>Molecular Cell Biology<br>(Lecture and Laboratory)..... | 4  |
| BIOL4405<br>Ethics in Science.....  | 3  |
| CHEM3281<br>Biochemistry I.....   | 3  |
| PHYS2202<br>Physics Laboratory II.....  | 1  |
| PHYS2204<br>University Physics II.....  | 3  |
| Oral Communication Elective.....  | 3  |
| Total.....  | 17 |

Consult pages 142–143 for additional details about the requirements for the B.S. in biology at the Metropolitan Campus, Teaneck, New Jersey.

## B.S. in Biology/Medical Doctor Seven-year Program

*(with Poznan University of Medical Sciences, Poznan, Poland)*

This accelerated, combined degree program provides qualified students the opportunity to complete a baccalaureate degree and a Medical Doctor (M.D.) degree in seven years — one year less than the normal span of eight years. The bachelor's degree is awarded by Fairleigh Dickinson University and the doctoral degree (Dyplom Lekarz) by Poznan University of Medical Sciences, in Poznan, Poland. The program is designed for American and Canadian students, and English is the teaching language.

Students are admitted to FDU as incoming freshmen or qualified transfer students. They may apply for the Bachelor of Science degree upon completion of six semesters at FDU, including the courses listed on page 240, and the first year of study at Poznan University of Medical Sciences. A maximum of 32 credits from the medical school may be transferred toward completion of the B.S. degree at FDU.

### Admission to the Combined Degree Program

High school seniors with a combined Scholastic Aptitude Test (SAT) score of approximately 1200 and ranking in the top 10 percent of their class or qualified students who have completed their first year of college study with a 3.50 cumulative grade point ratio may apply for admission to the combined degree program.

All applicants for admission to the combined degree program must satisfy secondary school preparation in English, mathematics, biology, chemistry and physics. The high school grade point average and rank in class, along with letters of recommendation from high school teachers, will be of primary importance in evaluating applicants' credentials. Applicants are required to submit scores of the College Board SAT's verbal and mathematical components.

After preliminary screening of the applications by the FDU Office of Admissions, qualified applicants will be invited for an interview with the FDU/Poznan University of Medical Sciences Joint Admissions Committee.

# Combined Degree Programs

B.S. in Biology/Medical Doctor

## Combined Degree Program Requirements

While enrolled at FDU, students are required to follow the accelerated preprofessional curriculum in biology and are expected to maintain a minimum cumulative grade point ratio of 3.50 (B+) in all course work and a minimum grade of B in the following prerequisite courses required for admission to Poznan University of Medical Sciences: organic chemistry, general chemistry, biology, physics, English.

## Qualifying for Enrollment at Poznan University of Medical Sciences

Qualified students enrolled in the combined degree program will be guaranteed a seat at Poznan University of Medical Sciences for training in medicine. To qualify, students must meet the following criteria:

- Completion of all FDU curriculum requirements, including the general education requirements and the degree program requirements for the major and all prerequisite courses required for admission to Poznan University of Medical Sciences;
- A cumulative grade point ratio of 3.50 or higher;
- Submission of a satisfactory Medical College Admissions Test (MCAT) score in a timely fashion;
- Recommendation by three members of the faculty, including the chair or director of the student's major department or school;
- Students currently enrolled at FDU who seek admission to the combined degree program must apply to the School of Natural Sciences, University College: Arts • Sciences • Professional Studies, Metropolitan Campus, Teaneck, N.J., or to the department of biological and allied health sciences, Maxwell Becton College of Arts and Sciences, Florham Campus, Madison, N.J., prior to the completion of 60 credit hours at FDU or at least one year before the anticipated date of matriculation at Poznan University of Medical Sciences; and
- Students enrolled in the combined degree program who decide to complete the B.S. degree at FDU prior to entering Poznan University of Medical Sciences must make this known to their school director or department chair prior to the completion of 60 credit hours at FDU or at

least one year before the anticipated date of matriculation at Poznan University of Medical Sciences.

## Specific Course Requirements

Students may choose to attend FDU at either of the University's New Jersey campuses.

## Metropolitan Campus

Under the provisions of the premedical program, students matriculate in University College: Arts • Sciences • Professional Studies for a minimum of 95 credits of course work leading to the B.S. in biology (preprofessional degree option), including the following courses:

| Topic Area                            | Credits |
|---------------------------------------|---------|
| Academic Writing.....                 | 3       |
| Academic Research and Writing.....    | 3       |
| English Literature .....              | 6       |
| University Core .....                 | 8       |
| SPCH/Oral Communication Elective..... | 3       |
| Total.....                            | 23      |

## Related Science Courses

|  |    |
|--|----|
| CHEM1201, CHEM1203;<br>CHEM1202, CHEM1204<br>General Chemistry I and II<br>(Lecture and Laboratory)..... | 8  |
| CHEM2261, CHEM2262, CHEM2263<br>Organic Chemistry I and II<br>(Lecture and Laboratory).....              | 10 |
| CHEM3281<br>Biochemistry I.....  | 3  |
| Mathematics (through Calculus I).....  | 8  |
| PHYS2201<br>Physics Laboratory I.....  | 1  |
| PHYS2202<br>Physics Laboratory II.....   | 1  |
| PHYS2203<br>University Physics I.....  | 3  |
| PHYS2204<br>University Physics II.....   | 3  |
| Total.....   | 37 |

## Biology Core

|   |   |
|---|---|
| BIOL1251, BIOL1253<br>General Biology I<br>(Lecture and Laboratory).....  | 4 |
| BIOL1252, BIOL1254<br>General Biology II<br>(Lecture and Laboratory)..... | 4 |
| BIOL2210, BIOL2211<br>Genetics (Lecture and Laboratory).....              | 4 |

|   |    |
|---|----|
| BIOL2237, BIOL2239<br>Human Structure and Function<br>(Lecture and Laboratory)<br>or<br>BIOL3225, BIOL3226<br>General Microbiology<br>(Lecture and Laboratory)..... | 4  |
| BIOL2300<br>Experimental Design.....  | 3  |
| BIOL4900<br>Biology Seminar I.....  | 1  |
| Total.....  | 20 |
| <b>Free Elective</b> .....  | 3  |

|  |    |
|--|----|
| Course Work to Be Completed at FDU's<br>University College Prior to Entering<br>Poznan University of Medical Sciences<br>Subtotal..... | 95 |
|--|----|

|   |     |
|---|-----|
| Credits to Be Transferred to FDU From<br>Poznan University of Medical Sciences... | 29  |
| Total Degree Requirements.....  | 124 |

## Florham Campus

Under the provisions of the premedical program, students matriculate in Maxwell Becton College of Arts and Sciences for a minimum of 97 credits of course work leading to the B.S. in biology (preprofessional degree option), including the following courses:

## Biology Requirements

|  |   |
|--|---|
| BIOL1201, BIOL1203<br>Biological Diversity<br>(Lecture and Laboratory).....                          | 4 |
| BIOL1202, BIOL1204<br>Introduction to Molecules, Cells<br>and Genes (Lecture and<br>Laboratory)..... | 4 |
| BIOL2003, BIOL2004<br>Cell Biology (Lecture and Laboratory)...                                       | 4 |
| BIOL3253, BIOL3254<br>Comparative Anatomy<br>(Lecture and Laboratory).....                           | 4 |
| BIOL3256, BIOL3257<br>Genetics (Lecture and Laboratory).....   | 4 |
| BIOL3337, BIOL3327<br>General Physiology<br>(Lecture and Laboratory).....                            | 4 |

## Cognate Requirements

|  |   |
|--|---|
| <b>(Chemistry, Mathematics, Physics)</b><br>CHEM1201, CHEM1202<br>General Chemistry I, II..... | 6 |
| CHEM1203, CHEM1204<br>General Chemistry Laboratory I, II.....                                  | 2 |

# Combined Degree Programs

B.S. in Biology/Medical Doctor

|   | Credits |
|---|---------|
| CHEM2261, CHEM2262<br>Organic Chemistry I, II.....            | 6       |
| CHEM2263, CHEM2264<br>Organic Chemistry Laboratory I, II..... | 2       |
| CHEM3281<br>Biochemistry I.....                               | 3       |
| MATH1107<br>Precalculus.....                                  | 4       |
| MATH1133<br>Applied Statistics.....                           | 3       |
| MATH1203<br>Calculus I.....                                   | 4       |

**Students must complete the general education course plan (see page 55) as well, including these specific classes:**

|  |   |
|--|---|
| PHIL1440<br>Biomedical Ethics.....           | 3 |
| SPCH1107<br>Fundamentals of Speech<br>or     |   |
| COMM2009<br>Professional Communications..... | 3 |

## Transfer Credits from Poznan University of Medical Sciences

Students enrolled in the combined degree program who successfully complete all course work in the first year at Poznan University of Medical Sciences with grades of C or better will be granted the Bachelor of Science degree from Poznan University of Medical Sciences, provided they have met all other graduation requirements. Up to 32 credits accepted in transfer toward completion of the B.S. degree requirements will be selected from among the following Poznan University of Medical Sciences (PUMS) courses:

| Course                       | PUMS<br>Contact<br>Hours | FDU<br>Credits<br>Granted |
|------------------------------|--------------------------|---------------------------|
| Gross Anatomy                | 190                      | 8                         |
| Histology                    | 110                      | 4                         |
| Embryology                   | 30                       | 2                         |
| Cell Biology                 | 30                       | 2                         |
| Neuroscience                 | 110                      | 4                         |
| Genetics (Human)             | 40                       | 2                         |
| Biochemistry                 | 170                      | 6                         |
| Physiology and<br>Biophysics | 170                      | 6                         |

## B.S. in Biology/Medical Doctor Eight-year Program

(with Ross University School of Medicine, Portsmouth, Dominica, West Indies)

This accelerated, combined degree program provides qualified students the opportunity to complete a baccalaureate degree (B.S. in biology) and a Medical Doctor (M.D.) degree in eight years. The bachelor's degree is awarded by Fairleigh Dickinson University and the doctoral degree (M.D.) by Ross University. English is the teaching language.

Students are admitted to FDU as incoming freshmen or qualified transfer students. They may apply for the Bachelor of Science degree upon successful completion of six semesters at FDU, including the courses listed below, and the first year of study (three semesters) at Ross University. A maximum of 32 credits from Ross University may be transferred toward completion of the B.S. degree at FDU.

## Admission to the Combined Degree Program

High school seniors with a combined SAT score of 1150 or higher and ranking in the top 25 percent of their class or qualified students who have completed their first year of college study with a 3.40 cumulative grade point ratio or higher may apply for admission to the combined degree program. Applicants must have had secondary school preparation in English, mathematics, biology, chemistry and physics. Letters of recommendation from high school teachers also are required.

The high school grade point average (GPA) and rank in class, along with letters of recommendation from high school teachers, will be of primary importance in evaluating applicants' credentials. Applicants are required to submit scores in the verbal and mathematical components of the SAT.

After preliminary screening of the applications by the FDU Office of Admissions, qualified applicants will be invited for an interview with the FDU/Ross University Joint Admissions Committee.

## Combined Degree Program Requirements

While enrolled at FDU, students are required to follow the accelerated preprofessional curriculum in biology and are expected to maintain a minimum cumulative grade point ratio of 3.25 or higher in all course work and a minimum of 3.00 in prerequisite courses required by Ross University.

## Qualifying for Enrollment at Ross University

To qualify, students must meet the following criteria:

- Completion of all FDU curriculum requirements, including the general education requirements and the degree program requirements for the major and all prerequisite courses required for admission at Ross University. Students need to maintain a grade point ratio (GPR) of 3.00 or higher in prerequisite courses with no D or F in any of the courses;
  - A GPR of 3.25 or higher;
  - Submission of a satisfactory MCAT score (24 or higher) in a timely fashion;
  - Students currently enrolled at FDU who seek admission to the combined degree program must apply to the School of Natural Sciences, University College: Arts • Sciences • Professional Studies, Metropolitan Campus, Teaneck, N.J., or to the department of biological and allied health sciences, Maxwell Becton College of Arts and Sciences, Florham Campus, Madison, N.J., prior to the completion of 60 credit hours at FDU or at least one year before the anticipated date of matriculation at Ross University; and
  - Students enrolled in the combined degree program who decide to complete the B.S. degree at FDU prior to entering Ross University must make this known to their school director or department chair prior to the completion of 60 credits at FDU or at least one year before the anticipated date of matriculation at Ross University.

## Premedical Curricula

Under the provisions of the premedical program, students matriculate in either University College: Arts • Sciences • Professional Studies, Metropolitan Campus, or Maxwell Becton College of Arts and Sciences, Florham Campus, for a

# Combined Degree Programs

B.S. in Biology/Medical Doctor

minimum of 96 credits (University College) 97 credits (Becton College) of course work leading to the B.S. in biology (preprofessional option). The curriculum is as follows:

## Metropolitan Campus

| <b>1st Semester</b>                   | Credits   |
|---------------------------------------|-----------|
| BIOL1251                              |           |
| General Biology I.....                | 3         |
| BIOL1253                              |           |
| Laboratory: General Biology I.....    | 1         |
| CHEM1201                              |           |
| General Chemistry I.....              | 3         |
| CHEM1205                              |           |
| General Chemistry Laboratory I.....   | 1         |
| ENWR1101                              |           |
| Academic Writing.....                 | 3         |
| UNIV1001                              |           |
| Transitioning to University Life..... | 1         |
| <b>Total.....</b>                     | <b>12</b> |

## 2nd Semester

|                                      |           |
|--------------------------------------|-----------|
| BIOL1252                             |           |
| General Biology II.....              | 3         |
| BIOL1254                             |           |
| Laboratory: General Biology II.....  | 1         |
| CHEM1202                             |           |
| General Chemistry II.....            | 3         |
| CHEM1204                             |           |
| General Chemistry Laboratory II..... | 1         |
| ENWR1102                             |           |
| Academic Research and Writing.....   | 3         |
| UNIV1002                             |           |
| Preparing for Professional Life..... | 1         |
| Mathematics Sequence.....            | 4         |
| <b>Total.....</b>                    | <b>16</b> |

## 3rd Semester

|   |           |
|---|-----------|
| BIOL2150, BIOL2250  |           |
| Ecology and Field Biology<br>(Lecture and Laboratory)           |           |
| or  |           |
| MBIO1209, MBIO1219  |           |
| Introduction to Marine Biology<br>(Lecture and Laboratory)..... | 4         |
| CHEM2261  |           |
| Organic Chemistry I.....  | 3         |
| CHEM2263  |           |
| Organic Chemistry Laboratory I.....                             | 2         |
| ENGL2201  |           |
| Masterpieces of World Literature I.....                         | 3         |
| Mathematics Sequence.....                                       | 4         |
| <b>Total.....</b>   | <b>16</b> |

## 4th Semester

|  | Credits   |
|--|-----------|
| BIOL2210, BIOL2211                       |           |
| Genetics (Lecture and Laboratory).....   | 4         |
| BIOL2300                                 |           |
| Experimental Design.....                 | 3         |
| CHEM2262                                 |           |
| Organic Chemistry II.....                | 3         |
| CHEM2264                                 |           |
| Organic Chemistry Laboratory II.....     | 2         |
| ENGL2202                                 |           |
| Masterpieces of World Literature II..... | 3         |
| UNIV2002                                 |           |
| Global Issues.....                       | 3         |
| <b>Total.....</b>                        | <b>18</b> |

## 5th Semester

|   |           |
|---|-----------|
| BIOL2237, BIOL2239  |           |
| Human Structure and Function<br>(Lecture and Laboratory)..... | 4         |
| BIOL3225, BIOL3226  |           |
| General Microbiology<br>(Lecture and Laboratory).....         | 4         |
| BIOL4900  |           |
| Biology Seminar I.....  | 1         |
| PHYS2201  |           |
| Physics Laboratory I.....                                     | 1         |
| PHYS2203  |           |
| University Physics I.....                                     | 3         |
| UNIV2001  |           |
| Cross-cultural Perspectives.....                              | 3         |
| <b>Total.....</b>   | <b>16</b> |

## 6th Semester

|   |           |
|---|-----------|
| BIOL4240, BIOL4241                                      |           |
| Molecular Cell Biology<br>(Lecture and Laboratory)..... | 4         |
| BIOL4405  |           |
| Ethics in Science.....                                  | 3         |
| CHEM3281  |           |
| Biochemistry I.....                                     | 3         |
| PHYS2202  |           |
| Physics Laboratory II.....                              | 1         |
| PHYS2204  |           |
| University Physics II.....                              | 3         |
| Oral Communication Elective.....                        | 3         |
| <b>Total.....</b>                                       | <b>17</b> |

## Florham Campus

| <b>Biology Requirements</b>  | Credits |
|--|---------|
| BIOL1201, BIOL1203   |         |
| Biological Diversity<br>(Lecture and Laboratory).....                          | 4       |
| BIOL1202, BIOL1204   |         |
| Introduction to Molecules, Cells<br>and Genes (Lecture and<br>Laboratory)..... | 4       |
| BIOL2003, BIOL2004   |         |
| Cell Biology (Lecture and Laboratory)....                                      | 4       |
| BIOL3253, BIOL3254   |         |
| Comparative Anatomy<br>(Lecture and Laboratory).....                           | 4       |
| BIOL3256, BIOL3257   |         |
| Genetics (Lecture and Laboratory).....   | 4       |
| BIOL3337, BIOL3327   |         |
| General Physiology<br>(Lecture and Laboratory).....                            | 4       |

## Cognate Requirements

| <b>(Chemistry, Mathematics, Physics)</b> |   |
|--|---|
| CHEM1201, CHEM1202                       |   |
| General Chemistry I, II.....             | 6 |
| CHEM1203, CHEM1204                       |   |
| General Chemistry Laboratory I, II.....  | 2 |
| CHEM2261, CHEM2262                       |   |
| Organic Chemistry I, II.....             | 6 |
| CHEM2263, CHEM2264                       |   |
| Organic Chemistry Laboratory I, II.....  | 2 |
| CHEM3281                                 |   |
| Biochemistry I.....                      | 3 |
| MATH1107                                 |   |
| Precalculus.....                         | 4 |
| MATH1133                                 |   |
| Applied Statistics.....                  | 3 |
| MATH1203                                 |   |
| Calculus I.....                          | 4 |

**Students must complete the general education course plan (see page 55) as well, including these specific classes:**

|                                  |   |
|----------------------------------|---|
| PHIL1440                         |   |
| Biomedical Ethics.....           | 3 |
| SPCH1107                         |   |
| Fundamentals of Speech<br>or     |   |
| COMM2009                         |   |
| Professional Communications..... | 3 |

# Combined Degree Programs

B.S. in Biology/Medical Doctor

B.S. in Biology/Doctor of Osteopathic Medicine

B.S. in Biochemistry or Biology or Chemistry/Doctor of Osteopathic Medicine

## **B.S. in Biology/Medical Doctor**

### **Seven-year Program**

*(with Universidad Autónoma de Guadalajara School of Medicine, Mexico)*

The program is based on the U.S. model. Students who complete the program are eligible to practice medicine in all 50 states. Universidad Autónoma de Guadalajara School of Medicine is approved by the U.S. Department of Education as an eligible institution to participate in the Stafford Plus and Supplemental Student Loan Programs. While Spanish is not required for applicants, one-year, college-level Spanish is recommended. There is a rolling admissions policy and two entering classes per year (August and January). Residencies in all 50 states. (<http://www.uag.edu/medicines> or <http://www.uag.mx>).

## **B.S. in Biology/Doctor of Osteopathic Medicine**

### **Seven-year Program**

## **B.S. in Biochemistry or Biology or Chemistry/Doctor of Osteopathic Medicine**

### **Eight-year Program**

*(with Lake Erie College of Osteopathic Medicine)*

These combined degree programs provide qualified students the opportunity to complete a baccalaureate degree and a Doctor of Osteopathic Medicine (D.O.) degree in seven (accelerated) or eight years. The bachelor's degrees are awarded by Fairleigh Dickinson University and the doctoral degree (D.O.) by Lake Erie College of Osteopathic Medicine (LECOM). Through these Early Acceptance Programs, Fairleigh Dickinson University undergraduate students are enrolled jointly by FDU and by LECOM. Once recommended by FDU, LECOM will interview the students prior to their enrollment at Fairleigh Dickinson University or within the first two years of being properly enrolled in the program. Students interviewing successfully will be offered a provisional acceptance to LECOM's Doctor of Osteopathic Medicine program.

The "4+4" track is comprised of two phases. Phase I consists of four years of undergraduate education at Fairleigh Dickinson University and completion of the B.S. in biochemistry or biology or chemistry degree. Phase II consists of four years (three years for the Primary Care Scholars Pathway) of medical school education at LECOM and its associated clinical training sites.

The "3+4" track is comprised of two phases. Phase I consists of three years of undergraduate education at FDU. Phase II consists of four years (three years for the Primary Care Scholars Pathway) of medical school education at LECOM and its associated clinical training sites. Students enrolled in this track will receive a B.S. in biology from FDU upon completion of at least 32 credit hours at LECOM. Each academic year, a combined total of maximum five students will be accepted by LECOM into Phase II of the Early Acceptance Program from each New Jersey campus of FDU. Provisionally accepted students may not apply to any other medical school. Application to

another medical school will result in the loss of the student's provisional acceptance.

## **Admission to Phase I of the Combined Degree Programs**

High school seniors with a combined SAT score of 1170 (ACT score of 26) and a grade point average (GPA) of 3.50 or better may apply for admission to the combined degree program. All applicants for admission to the combined degree program must satisfy secondary school preparation in English, mathematics, biology chemistry and physics. The high school GPA and rank in class, along with letters of recommendation from high school teachers, will be of primary importance in evaluating applicant's credentials. Applicants are required to submit scores in the verbal and the mathematical components of the SAT.

### *Medical 3+4 Phase I Admissions Criteria:*

SAT (mathematics and verbal) or ACT score: 1280 (SAT) or 29 (ACT)

High school unweighted GPA: 3.80

### *Medical 4+4 Phase I Admissions Criteria:*

SAT (mathematics and verbal) or ACT score: 1170 (SAT) or 26 (ACT)

High school unweighted GPA: 3.50

## **Combined Degree Program Requirements**

While enrolled at FDU, students are required to follow the accelerated preprofessional curriculum in biology (for the 3+4 track) and a curriculum in biology, biochemistry or chemistry for the 4+4 track. They are expected to maintain a minimum cumulative grade point ratio (GPR) of 3.40 or higher in all course work and a minimum GPR of 3.20 in science courses.

## **Qualifying for Enrollment of Phase II at Lake Erie College of Osteopathic Medicine**

Qualified students enrolled in the combined degree programs will be accepted into Phase II of the program if they meet the following criteria:

- Completion of all FDU curriculum requirements, including the general education requirements and the degree program requirements for the major and all prerequisite courses required for admission at

# Combined Degree Programs

B.S. in Biology/Doctor of Osteopathic Medicine

B.S. in Biochemistry or Biology or Chemistry/Doctor of Osteopathic Medicine

LECOM. Students need to maintain a GPR of 3.20 or higher in prerequisite courses with no grade lower than C in any of them;

- No reduced course load will be accepted. No summer courses will be accepted except in the case of scheduling conflicts;

- Submission of a satisfactory MCAT score (established by LECOM at the time of entry into the Early Acceptance Program) in a timely fashion;

- Full-time students currently enrolled at FDU who seek admission to the combined degree programs must apply to the School of Natural Sciences, University College: Arts • Sciences • Professional Studies, Metropolitan Campus, Teaneck, N.J., or to the department of biological and allied health sciences, Maxwell Becton College of Arts and Sciences, Florham Campus, Madison, N.J., prior to February 1 of their freshman year for the 3+4 Early Acceptance Program, or by February 1 of their sophomore year for the 4+4 program; and

- Students in the “3+4” track may switch to the “4+4” track by notifying FDU’s Pre-Health Professions Advisory Committee no later than December 1 of their third year of enrollment in the program.

### Medical 3+4 Phase II Admissions

#### Criteria:

Cumulative overall GPR: 3.50 or higher

Cumulative science GPR: 3.20 or

higher

Academic Index Score: 125

MCAT\*: 25 (at least 7 in each subcategory)

### Medical 4+4 Phase II Admissions

#### Criteria:

Cumulative overall GPR: 3.40

Cumulative science GPR: 3.20

Academic Index Score: 115

MCAT\*: 25 (at least 7 in each subcategory)

### Premedical Curricula

Students enrolled in the 4+4 years Early Acceptance Program will follow the curricula for the B.S. in biology (see pages 65 and 140), B.S. in biochemistry (see pages 66 and 142) or B.S. in chemistry (see pages 68 and 145).

Under the provisions of the pre-osteopathic medicine accelerated program (3+4 years), students matriculate in either University College: Arts • Sciences • Professional Studies or Maxwell Becton College of Arts and Sciences for a minimum of 95 credits of course work leading to the B.S. in biology (preprofessional option). The curricula are as follows:

### Metropolitan Campus Phase I (3+4 Track)

| 1st Semester                                    | Credits |
|---|---------|
| BIOL1251, BIOL1253                              |         |
| General Biology I (Lecture and Laboratory)..... | 4       |
| CHEM1201  |         |
| General Chemistry I.....                        | 3       |
| CHEM1203  |         |
| General Chemistry Laboratory I.....             | 1       |
| ENWR1101  |         |
| Academic Writing.....                           | 3       |
| UNIV1001  |         |
| Transitioning to University Life.....           | 1       |
| Total.....                                      | 12      |

### 2nd Semester

|  |    |
|--|----|
| BIOL1252, BIOL1254                               |    |
| General Biology II (Lecture and Laboratory)..... | 4  |
| CHEM1202   |    |
| General Chemistry II.....                        | 3  |
| CHEM1204   |    |
| General Chemistry Laboratory II.....             | 1  |
| ENWR1102   |    |
| Academic Research and Writing.....               | 3  |
| UNIV1002   |    |
| Preparing for Professional Life.....             | 1  |
| Mathematics Sequence.....                        | 4  |
| Total.....                                       | 16 |

### 3rd Semester

|  |   |
|--|---|
| BIOL2150, BIOL2250   |   |
| Ecology and Field Biology (Lecture and Laboratory)           |   |
| or   |   |
| MBIO1209, MBIO1219   |   |
| Introduction to Marine Biology (Lecture and Laboratory)..... | 4 |

Credits

|   |    |
|---|----|
| CHEM2261                                |    |
| Organic Chemistry I.....                | 3  |
| CHEM2263                                |    |
| Organic Chemistry Laboratory I.....     | 2  |
| ENGL2201                                |    |
| Masterpieces of World Literature I..... | 3  |
| Mathematics Sequence.....               | 4  |
| Total.....                              | 16 |

### 4th Semester

|  |    |
|--|----|
| BIOL2210, BIOL2211                       |    |
| Genetics (Lecture and Laboratory).....   | 4  |
| BIOL2300                                 |    |
| Experimental Design.....                 | 3  |
| CHEM2262                                 |    |
| Organic Chemistry II.....                | 3  |
| CHEM2264                                 |    |
| Organic Chemistry Laboratory II.....     | 2  |
| ENGL2202                                 |    |
| Masterpieces of World Literature II..... | 3  |
| UNIV2002                                 |    |
| Global Issues.....                       | 3  |
| Total.....                               | 18 |

### 5th Semester

|  |    |
|--|----|
| BIOL2237, BIOL2239                                 |    |
| Human Structure and Function.....                  | 4  |
| BIOL3225, BIOL3226                                 |    |
| General Microbiology (Lecture and Laboratory)..... | 4  |
| BIOL4900   |    |
| Biology Seminar I.....                             | 1  |
| PHYS2201   |    |
| Physics Laboratory I.....                          | 1  |
| PHYS2203   |    |
| University Physics I.....                          | 3  |
| UNIV2001   |    |
| Cross-cultural Perspectives.....                   | 3  |
| Total.....   | 16 |

### 6th Semester

|  |    |
|--|----|
| BIOL4240, BIOL4241                                   |    |
| Molecular Cell Biology (Lecture and Laboratory)..... | 4  |
| BIOL4405   |    |
| Ethics in Science.....                               | 3  |
| CHEM3281   |    |
| Biochemistry I.....                                  | 3  |
| PHYS2202   |    |
| Physics Laboratory II.....                           | 1  |
| PHYS2204   |    |
| University Physics II.....                           | 3  |
| Oral Communication Elective.....                     | 3  |
| Total.....   | 17 |

\*Students matriculating to LECOM in 2016 and later will be exempt from the MCAT requirement, provided that the minimum Academic Index Score requirement has been met and that the student has earned a grade of “C” or better in biochemistry and genetics.

# Combined Degree Programs

B.S. in Biology/Doctor of Pharmacy

## Florham Campus (3+4 Track)

| <b>Biology Requirements</b>  | Credits |
|--|---------|
| BIOL1201, BIOL1203<br>Biological Diversity<br>(Lecture and Laboratory).....                          | 4       |
| BIOL1202, BIOL1204<br>Introduction to Molecules, Cells<br>and Genes (Lecture and<br>Laboratory)..... | 4       |
| BIOL2003, BIOL2004<br>Cell Biology (Lecture and Laboratory)...                                       | 4       |
| BIOL3253, BIOL3254<br>Comparative Anatomy<br>(Lecture and Laboratory).....                           | 4       |
| BIOL3256, BIOL3257<br>Genetics (Lecture and Laboratory).....   | 4       |
| BIOL3337, BIOL3327<br>General Physiology<br>(Lecture and Laboratory).....                            | 4       |

## Cognate Requirements (Chemistry, Mathematics, Physics)

|   |   |
|---|---|
| CHEM1201, CHEM1202<br>General Chemistry I, II.....            | 6 |
| CHEM1203, CHEM1204<br>General Chemistry Laboratory I, II..... | 2 |
| CHEM2261, CHEM2262<br>Organic Chemistry I, II.....            | 6 |
| CHEM2263, CHEM2264<br>Organic Chemistry Laboratory I, II..... | 2 |
| MATH1107<br>Precalculus.....                                  | 4 |
| MATH1133<br>Applied Statistics.....                           | 3 |
| MATH1203<br>Calculus I.....                                   | 4 |

**Students must complete the general education course plan (see page 55) as well, including these specific classes:**

|  |   |
|--|---|
| PHIL1440<br>Biomedical Ethics.....   | 3 |
| SPCH1107<br>Fundamentals of Speech<br>or<br>COMM2009<br>Professional Communications..... | 3 |

## Two social and behavioral science classes

From either psychology, sociology or anthropology. Each class should be in a different discipline

## B.S. in Biology/Doctor of Pharmacy Seven-year Program

(with FDU School of Pharmacy and Health Sciences, Fairleigh Dickinson University)

Fairleigh Dickinson University sophomores and high school seniors can apply to the B.S. in biology plus Pharm.D. combined program (3+4) offered by the School of Pharmacy and Health Sciences.

Sophomore applicants studying biology, and maintaining a 3.30 grade point ratio must also have a grade of B- or better in all prerequisite college courses. The program is even more competitive for high school students seeking admission: students must have an SAT score of 1150 or higher (on the 1600 scale) and a 3.50 grade point average.

The program is structured so that students complete three years of undergraduate work in a “feeder” science major through the Maxwell Becton College of Arts and Sciences or University College: Arts • Sciences • Professional Studies before transitioning to the School of Pharmacy and Health Sciences to begin four years of graduate work. They ultimately achieve both a Bachelor of Science and Doctor of Pharmacy.

## Metropolitan Campus

A minimum of 120 credits for the B.S. degree; 100–104 of these are taken at the Metropolitan Campus in years 1–3 + 28 credits (to be approved by the department chair/director) in year 4 at FDU’s School of Pharmacy and Health Sciences. Students not accepted into FDU’s School of Pharmacy and Health Sciences have the option of switching out of the B.S. in biology/Pharm.D. combined degree and into another concentration.

## B.S. in Biology and Doctor of Pharmacy Combined Degree

| <b>1st Semester</b>                             | Credits |
|---|---------|
| BIOL1251<br>General Biology I.....              | 3       |
| BIOL1253<br>Laboratory: General Biology I.....  | 1       |
| CHEM1201<br>General Chemistry I.....            | 3       |
| CHEM1203<br>General Chemistry Laboratory I..... | 1       |

|   |           |
|---|-----------|
| ENWR1101<br>Academic Writing.....                 | 3         |
| MATH2337<br>Applied Statistics I.....             | 3         |
| UNIV1001<br>Transitioning to University Life..... | 1         |
| <b>Total.....</b>                                 | <b>15</b> |

## 2nd Semester

|  |           |
|--|-----------|
| BIOL1252<br>General Biology II.....              | 3         |
| BIOL1254<br>Laboratory: General Biology II.....  | 1         |
| CHEM1202<br>General Chemistry II.....            | 3         |
| CHEM1204<br>General Chemistry Laboratory II..... | 1         |
| ENWR1102<br>Academic Research and Writing.....   | 3         |
| MATH<br>Mathematics Sequence*.....               | 4         |
| UNIV1002<br>Preparing for Professional Life..... | 1         |
| <b>Total.....</b>                                | <b>16</b> |

## 3rd Semester

|  |           |
|--|-----------|
| BIOL2150, BIOL2250<br>Ecology and Field Biology<br>(Lecture and Laboratory)<br>or<br>MBIO1209, MBIO1219<br>Introduction to Marine Biology<br>(Lecture and Laboratory)..... | 4         |
| CHEM2261<br>Organic Chemistry I.....   | 3         |
| CHEM2263<br>Organic Chemistry Laboratory I.....  | 2         |
| ENGL2201<br>Masterpieces of World Literature I.....  | 3         |
| MATH<br>Mathematics Sequence*.....   | 4         |
| <b>Total.....</b>  | <b>16</b> |

## 4th Semester

|  |           |
|--|-----------|
| BIOL2210, BIOL2211<br>Genetics (Lecture and Laboratory)..... | 4         |
| CHEM2262<br>Organic Chemistry II.....                        | 3         |
| CHEM2264<br>Organic Chemistry Laboratory II.....             | 2         |
| ENGL2202<br>Masterpieces of World Literature II.....         | 3         |
| UNIV2001<br>Cross-cultural Perspectives.....                 | 3         |
| <b>Total.....</b>  | <b>15</b> |

\*Students are required to include in the first year at least one semester of Calculus.

# Combined Degree Programs

B.S. in Biology/Doctor of Pharmacy

| <b>5th Semester</b>   | Credits |  | Credits      |  | Credits |
|---|---------|--|--------------|--|---------|
| BIOL2237, BIOL2239  |         | PHRM6700   |              | PHRM7111   |         |
| Human Structure and Function I<br>(Lecture and Laboratory).....   | 4       | Beyond the Curriculum:<br>Foundations in Pharmacy<br>Education.....  | 0            | Integrated Pharmacotherapy V–VI:<br>Conceptual Connections and<br>Patient Care.....                  | 2       |
| BIOL3225, BIOL3226  |         |  | Total.....19 | PHRM7112   |         |
| General Microbiology<br>(Lecture and Laboratory).....   | 4       | <b>8th Semester</b>  |              | Integrated Pharmacotherapy<br>VII–VIII: Conceptual<br>Connections and Patient Care.....              | 2       |
| BIOL4900  |         | PHRM6102   |              | PHRM7201   |         |
| Biology Seminar I.....  | 1       | Integrated Pharmacotherapy II:<br>Gastrointestinal.....  | 3            | Pharmaceutical Dispensing and<br>Compounding.....  | 1       |
| PHYS2201  |         | PHRM6103   |              | PHRM7202   |         |
| Physics Laboratory I.....   | 1       | Integrated Pharmacotherapy III:<br>Dermatology, Over-the-Counter<br>Remedies and Self Care.....                  | 3            | Pharmaceutics III: Sterile Products<br>and Biopharmaceuticals.....                                   | 3       |
| PHYS2203  |         | PHRM6104   |              | PHRM7301   |         |
| University Physics I.....   | 3       | Integrated Pharmacotherapy IV:<br>Cardiology.....  | 4            | PHRM7302   |         |
| UNIV2002  |         | PHRM6111   |              | Epidemiology and Study Design<br>Evaluation.....   | 3       |
| Global Issues.....  | 3       | Integrated Pharmacotherapy II–IV:<br>Conceptual Connections and<br>Patient Care.....                             | 2            | PHRM7401   |         |
| Total.....  | 16      | PHRM6202   |              | Professional Pharmacy Practice<br>III: Pharmaceutical Informatics<br>and Drug Information.....       | 2       |
| <b>6th Semester</b>   |         | PHRM6402   |              | PHRM7501   |         |
| BIOL3357, BIOL3358  |         | Pharmaceutics II: Dosage Forms<br>and Drug Delivery Technology.....  | 3            | Introductory Pharmacy Practice<br>Experience (IPPE) II: Institutional....                            | 3       |
| Human Structure and Function II<br>(Lecture and Laboratory).....  | 4       | PHRM6701   |              | PHRM7700   |         |
| BIOL4240, BIOL4241  |         | Beyond the Curriculum:<br>Foundations in Pharmacy<br>Education.....  | 1            | Beyond the Curriculum:<br>Expanding Horizons.....  | 0       |
| Molecular Cell Biology<br>(Lecture and Laboratory).....   | 4       |  | Total.....18 | PHRM7701   |         |
| CHEM3281  |         | <b>School of Pharmacy and Health<br/>Sciences Courses for All<br/>Undergraduate Majors<br/>Years 5 through 7</b> |              | Beyond the Curriculum: Expanding<br>Horizons.....  | 1       |
| Biochemistry I.....   | 3       | PHRM6501   |              | PHRM8109   |         |
| PHYS2202  |         | Introductory Pharmacy Practice<br>Experience (IPPE) I: Community.....  | 3            | Integrated Pharmacotherapy IX:<br>Autoimmune Diseases, Rare<br>Diseases and Special Populations..... | 3       |
| Physics Laboratory II.....  | 1       | PHRM7105   |              | PHRM8110   |         |
| PHYS2204  |         | Integrated Pharmacotherapy V:<br>Neurology, Psychiatry and<br>Anesthesiology.....                                | 4            | Integrated Pharmacotherapy X:<br>Hematology and Oncology.....  | 3       |
| University Physics II.....  | 3       | PHRM7106   |              | PHRM8111   |         |
| SPCH  |         | Integrated Pharmacotherapy VI:<br>Infectious Disease.....  | 4            | Integrated Pharmacotherapy IX–X:<br>Conceptual Connections and<br>Patient Care.....                  | 2       |
| Oral Communication Elective*.....   | 3       | PHRM7107   |              | PHRM8112   |         |
| Total.....  | 18      | Integrated Pharmacotherapy VII:<br>Pulmonary, Eye, Ear, Nose<br>and Throat.....                                  | 3            | Integrated Pharmacotherapy I–X:<br>A Whole System Overview and<br>Effecting Patient Care.....        | 2       |
| <b>7th Semester</b>   |         | PHRM7108   |              | PHRM8201   |         |
| PHRM6100  |         | Integrated Pharmacotherapy VIII:<br>Endocrine, Urinary Tract,<br>Renal and Reproductive Health.....              | 4            | Pharmacogenomics and<br>Personalized Medicine.....   | 2       |
| Foundations in Pharmaceutical<br>Science: Pharmacology,<br>Medicinal Chemistry,<br>Pharmacokinetics.....                                      | 4       |  |              | PHRM8301   |         |
| PHRM6101  |         |  |              | Pharmacoepidemiology,<br>Pharmacoconomics and<br>Health Outcomes.....                                | 3       |
| Foundations in Integrated<br>Pharmacotherapy I: An<br>Introduction to Pathophysiology,<br>Genetics, Microbiology and<br>Delivery of Care..... | 3       |  |              | PHRM8302   |         |
| PHRM6201  |         |  |              | Public Health and the Global<br>Mission of Pharmacy.....   | 2       |
| Pharmaceutics I: Physical Pharmacy.....   | 3       |  |              |  |         |
| PHRM6211  |         |  |              |  |         |
| Pharmaceutical Calculations I.....  | 1       |  |              |  |         |
| PHRM6301  |         |  |              |  |         |
| Medical Communication and<br>Technical Writing.....   | 2       |  |              |  |         |
| PHRM6321  |         |  |              |  |         |
| Pharmacy Care Law and Ethics.....   | 3       |  |              |  |         |
| PHRM6401  |         |  |              |  |         |
| Professional Pharmacy Practice I:<br>Health Care Delivery.....  | 3       |  |              |  |         |

\*Requirements consist of a three-credit Speech course.



# Combined Degree Programs

B.S. in Biology/Doctor of Pharmacy

| Credits |   | Credits |  | Credits |  |
|---------|---|---------|--|---------|--|
|         | PHRM8402  |         | PHRM9305   |         | PHRM9507   |
|         | Professional Pharmacy Practice IV:<br>Pharmacy Leadership and<br>Management .....2                        |         | Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Long Term Care I.....5                 |         | Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Marketing I.....5                              |
|         | PHRM8700  |         | PHRM9307   |         | PHRM9509   |
|         | Beyond the Curriculum/<br>Preparing Practitioners.....0   |         | Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Infectious Disease I.....5             |         | Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Patient Advocacy I.....5                       |
|         | PHRM8701  |         | PHRM9309   |         | PHRM9511   |
|         | Beyond the Curriculum/<br>Preparing Practitioners.....1   |         | Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Oncology I.....5                       |         | Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Health Care<br>Organization Management I.....5 |
|         | PHRM8900  |         | PHRM9311   |         | PHRM9513   |
|         | Pharmacy Capstone.....2   |         | Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Critical Care I.....5                  |         | Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Informatics I.....5                            |
|         | PHRM9101  |         | PHRM9313   |         | PHRM9515   |
|         | Advanced Pharmacy Practice<br>Experience (APPE) I: Community.....5  |         | Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Cardiology I.....5                     |         | Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Management I.....5                             |
|         | PHRM9102  |         | PHRM9315   |         | PHRM9517   |
|         | Advanced Pharmacy Practice<br>Experience (APPE) II: Institutional...5                                     |         | Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Behavioral Health I.....5              |         | Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Regulatory I.....5                             |
|         | PHRM9103  |         | PHRM9401   |         |  |
|         | Advanced Pharmacy Practice<br>Experience (APPE) III:<br>Ambulatory Care.....5                             |         | Advanced Pharmacy Practice<br>Experience (APPE) VII: Elective –<br>Drug Information I.....5              |         |  |
|         | PHRM9104  |         | PHRM9403   |         |  |
|         | Advanced Pharmacy Practice<br>Experience (APPE) IV: Acute Care...5  |         | Advanced Pharmacy Practice<br>Experience (APPE) VII: Elective –<br>Medication Safety I.....5             |         |  |
|         | PHRM9201  |         | PHRM9405   |         |  |
|         | Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Community Practice I.....5               |         | Advanced Pharmacy Practice<br>Experience (APPE) VII: Elective –<br>Managed Care I.....5                  |         |  |
|         | PHRM9203  |         | PHRM9407   |         |  |
|         | Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Ambulatory Care I.....5                  |         | Advanced Pharmacy Practice<br>Experience (APPE) VII: Elective –<br>Specialty Pharmacy I.....5            |         |  |
|         | PHRM9205  |         | PHRM9409   |         |  |
|         | Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Community Compounding I.....5            |         | Advanced Pharmacy Practice<br>Experience (APPE) VII: Elective –<br>Medical Device/Patient Safety I.....5 |         |  |
|         | PHRM9207  |         | PHRM9501   |         |  |
|         | Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Medication Therapy<br>Management I.....5 |         | Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Public Health I.....5                |         |  |
|         | PHRM9209  |         | PHRM9503   |         |  |
|         | Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>HIV/AIDS I.....5                         |         | Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Industry I.....5                     |         |  |
|         | PHRM9211  |         | PHRM9505   |         |  |
|         | Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Home Infusion I.....5                    |         | Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Research I.....5                     |         |  |
|         | PHRM9301  |         |  |         |  |
|         | Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Hospital Practice I.....5               |         |  |         |  |
|         | PHRM9303  |         |  |         |  |
|         | Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Acute Care I.....5                      |         |  |         |  |

## Florham Campus

### ***B.S. in Biology and Doctor of Pharmacy Combined Degree***

#### ***Major Requirements (24 credits)***

|          |   |
|----------|---|
| BIOL1201 | Biological Diversity<br>(Lecture and Laboratory).....4                          |
| BIOL1202 | Introduction to Molecules, Cells<br>and Genes (Lecture and<br>Laboratory).....4 |
| BIOL2003 | Cell Biology (Lecture and Laboratory)...4                                       |
| BIOL3253 | Comparative Anatomy<br>(Lecture and Laboratory).....4                           |
| BIOL3256 | Genetics (Lecture and Laboratory).....4   |
| BIOL3337 | General Physiology (Lecture<br>and Laboratory).....4                            |

#### ***Cognate Requirements (19 credits)***

|          |                                      |
|----------|--------------------------------------|
| CHEM1201 | General Chemistry I.....3            |
| CHEM1203 | General Chemistry Laboratory I.....1 |
| CHEM1202 | General Chemistry II.....3           |

# Combined Degree Programs

B.S. in Biology/Doctor of Pharmacy

| Credits |  | Credits |   | Credits |
|---------|--|---------|---|---------|
|         | CHEM1204   |         | PHRM7202  |         |
|         | General Chemistry Laboratory II.....1  |         | Pharmaceutics III: Sterile Products<br>and Biopharmaceuticals.....3                                       |         |
|         | CHEM2261   |         | PHRM7301  |         |
|         | Organic Chemistry I.....3  |         | Biostatistics.....2   |         |
|         | CHEM2262   |         | PHRM7302  |         |
|         | Organic Chemistry II.....3   |         | Epidemiology and Study Design<br>Evaluation.....3   |         |
|         | CHEM2263   |         | PHRM7401  |         |
|         | Organic Chemistry Laboratory I.....1   |         | Professional Pharmacy Practice<br>III: Pharmaceutical Informatics<br>and Drug Information.....2           |         |
|         | CHEM2264   |         | PHRM7501  |         |
|         | Organic Chemistry Laboratory II.....1  |         | Introductory Pharmacy Practice<br>Experience (IPPE) II: Institutional...3                                 |         |
|         | CHEM3281   |         | PHRM7700  |         |
|         | Biochemistry I.....3   |         | Beyond the Curriculum:<br>Expanding Horizons.....0  |         |
|         | MATH1203   |         | PHRM7701  |         |
|         | Calculus I.....4   |         | Beyond the Curriculum: Expanding<br>Horizons .....1   |         |
|         | PHYS1001, PHYS1011   |         | PHRM8109  |         |
|         | General Physics I (Lecture<br>and Laboratory).....4  |         | Integrated Pharmacotherapy IX:<br>Autoimmune Diseases, Rare<br>Diseases and Special Populations.....3     |         |
|         | PHYS1002, PHYS1012   |         | PHRM8110  |         |
|         | General Physics II (Lecture<br>and Laboratory).....4   |         | Integrated Pharmacotherapy X:<br>Hematology and Oncology.....3  |         |
|         | <b>School of Pharmacy and Health<br/>Sciences Courses for All<br/>Undergraduate Majors<br/>Years 5 through 7</b> |         | PHRM8111  |         |
|         | PHRM6501   |         | Integrated Pharmacotherapy IX–X:<br>Conceptual Connections and<br>Patient Care .....2                     |         |
|         | Introductory Pharmacy Practice<br>Experience (IPPE) I: Community.....3   |         | PHRM8112  |         |
|         | PHRM7105   |         | Integrated Pharmacotherapy I–X:<br>A Whole System Overview and<br>Effecting Patient Care.....2            |         |
|         | Integrated Pharmacotherapy V:<br>Neurology, Psychiatry and<br>Anesthesiology.....4                               |         | PHRM8201  |         |
|         | PHRM7106   |         | Pharmacogenomics and<br>Personalized Medicine.....2   |         |
|         | Integrated Pharmacotherapy VI:<br>Infectious Disease.....4   |         | PHRM8301  |         |
|         | PHRM7107   |         | Pharmacoepidemiology,<br>Pharmacoeconomics and<br>Health Outcomes.....3                                   |         |
|         | Integrated Pharmacotherapy VII:<br>Pulmonary, Eye, Ear, Nose<br>and Throat.....3                                 |         | PHRM8302  |         |
|         | PHRM7108   |         | Public Health and the Global<br>Mission of Pharmacy.....2   |         |
|         | Integrated Pharmacotherapy VIII:<br>Endocrine, Urinary Tract,<br>Renal and Reproductive Health.....4             |         | PHRM8402  |         |
|         | PHRM7111   |         | Professional Pharmacy Practice IV:<br>Pharmacy Leadership and<br>Management .....2                        |         |
|         | Integrated Pharmacotherapy V–VI:<br>Conceptual Connections and<br>Patient Care.....2                             |         | PHRM8700  |         |
|         | PHRM7112   |         | Beyond the Curriculum/<br>Preparing Practitioners.....0   |         |
|         | Integrated Pharmacotherapy<br>VII–VIII: Conceptual<br>Connections and Patient Care.....2                         |         | PHRM8701  |         |
|         | PHRM7201   |         | Beyond the Curriculum/<br>Preparing Practitioners.....1   |         |
|         | Pharmaceutical Dispensing and<br>Compounding.....1   |         | PHRM8900  |         |
|         |  |         | Pharmacy Capstone.....2   |         |
|         |  |         | PHRM9101  |         |
|         |  |         | Advanced Pharmacy Practice<br>Experience (APPE) I: Community....5   |         |
|         |  |         | PHRM9102  |         |
|         |  |         | Advanced Pharmacy Practice<br>Experience (APPE) II: Institutional...5                                     |         |
|         |  |         | PHRM9103  |         |
|         |  |         | Advanced Pharmacy Practice<br>Experience (APPE) III:<br>Ambulatory Care.....5                             |         |
|         |  |         | PHRM9104  |         |
|         |  |         | Advanced Pharmacy Practice<br>Experience (APPE) IV: Acute Care...5  |         |
|         |  |         | PHRM9201  |         |
|         |  |         | Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Community Practice I .....5              |         |
|         |  |         | PHRM9203  |         |
|         |  |         | Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Ambulatory Care I .....5                 |         |
|         |  |         | PHRM9205  |         |
|         |  |         | Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Community Compounding I.....5            |         |
|         |  |         | PHRM9207  |         |
|         |  |         | Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Medication Therapy<br>Management I.....5 |         |
|         |  |         | PHRM9209  |         |
|         |  |         | Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>HIV/AIDS I.....5                         |         |
|         |  |         | PHRM9211  |         |
|         |  |         | Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Home Infusion I.....5                    |         |
|         |  |         | PHRM9301  |         |
|         |  |         | Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Hospital Practice I.....5               |         |
|         |  |         | PHRM9303  |         |
|         |  |         | Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Acute Care I.....5                      |         |
|         |  |         | PHRM9305  |         |
|         |  |         | Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Long Term Care I.....5                  |         |
|         |  |         | PHRM9307  |         |
|         |  |         | Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Infectious Disease I.....5              |         |
|         |  |         | PHRM9309  |         |
|         |  |         | Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Oncology I.....5                        |         |

# Combined Degree Programs

B.S. in Biology/Doctor of Physical Therapy

|                                      | Credits |                               | Credits |
|--------------------------------------|---------|-------------------------------|---------|
| PHRM9311                             |         | PHRM9513                      |         |
| Advanced Pharmacy Practice           |         | Advanced Pharmacy Practice    |         |
| Experience (APPE) VI: Elective –     |         | Experience (APPE) VIII:       |         |
| Critical Care I.....                 | 5       | Elective – Informatics I..... | 5       |
| PHRM9315                             |         | PHRM9515                      |         |
| Advanced Pharmacy Practice           |         | Advanced Pharmacy Practice    |         |
| Experience (APPE) VI: Elective –     |         | Experience (APPE) VIII:       |         |
| Cardiology I.....                    | 5       | Elective – Management I.....  | 5       |
| PHRM9315                             |         | PHRM9517                      |         |
| Advanced Pharmacy Practice           |         | Advanced Pharmacy Practice    |         |
| Experience (APPE) VI: Elective –     |         | Experience (APPE) VIII:       |         |
| Behavioral Health I.....             | 5       | Elective – Regulatory I.....  | 5       |
| PHRM9401                             |         |                               |         |
| Advanced Pharmacy Practice           |         |                               |         |
| Experience (APPE) VII: Elective –    |         |                               |         |
| Drug Information I.....              | 5       |                               |         |
| PHRM9403                             |         |                               |         |
| Advanced Pharmacy Practice           |         |                               |         |
| Experience (APPE) VII: Elective –    |         |                               |         |
| Medication Safety I.....             | 5       |                               |         |
| PHRM9405                             |         |                               |         |
| Advanced Pharmacy Practice           |         |                               |         |
| Experience (APPE) VII: Elective –    |         |                               |         |
| Managed Care I.....                  | 5       |                               |         |
| PHRM9407                             |         |                               |         |
| Advanced Pharmacy Practice           |         |                               |         |
| Experience (APPE) VII: Elective –    |         |                               |         |
| Specialty Pharmacy I.....            | 5       |                               |         |
| PHRM9409                             |         |                               |         |
| Advanced Pharmacy Practice           |         |                               |         |
| Experience (APPE) VII: Elective –    |         |                               |         |
| Medical Device/Patient Safety I..... | 5       |                               |         |
| PHRM9501                             |         |                               |         |
| Advanced Pharmacy Practice           |         |                               |         |
| Experience (APPE) VIII:              |         |                               |         |
| Elective – Public Health I.....      | 5       |                               |         |
| PHRM9503                             |         |                               |         |
| Advanced Pharmacy Practice           |         |                               |         |
| Experience (APPE) VIII:              |         |                               |         |
| Elective – Industry I.....           | 5       |                               |         |
| PHRM9505                             |         |                               |         |
| Advanced Pharmacy Practice           |         |                               |         |
| Experience (APPE) VIII:              |         |                               |         |
| Elective – Research I.....           | 5       |                               |         |
| PHRM9507                             |         |                               |         |
| Advanced Pharmacy Practice           |         |                               |         |
| Experience (APPE) VIII:              |         |                               |         |
| Elective – Marketing I.....          | 5       |                               |         |
| PHRM9509                             |         |                               |         |
| Advanced Pharmacy Practice           |         |                               |         |
| Experience (APPE) VIII:              |         |                               |         |
| Elective – Patient Advocacy I.....   | 5       |                               |         |
| PHRM9511                             |         |                               |         |
| Advanced Pharmacy Practice           |         |                               |         |
| Experience (APPE) VIII:              |         |                               |         |
| Elective – Health Care               |         |                               |         |
| Organization Management I.....       | 5       |                               |         |

## B.S. in Biology/Doctor of Physical Therapy Six-year Program

*(with FDU's Henry P. Becton School of Nursing and Allied Health in partnership with the Rutgers School of Health Related Professions [Rutgers SHRP])*

This physical therapy program is a collaborative program between Fairleigh Dickinson University and the Rutgers School of Health Related Professions (Rutgers SHRP). Students who successfully complete the program are awarded a B.S. in biology from FDU and a Doctor of Physical Therapy (D.P.T.) degree from Rutgers SHRP.

This program offers an outstanding opportunity for talented and motivated students with a strong career interest to fast-track their careers. Students who wish to become physical therapists are provided with a state-of-the-art education that prepares them to be at the forefront of the physical therapy profession.

Students in the entry-level component of the program spend their first years at FDU, completing 92 credits of required courses (48 credits of University and Core requirements and 44 credits of major requirements). Students must formally apply for acceptance into the professional component at the Rutgers SHRP Physical Therapy Program.

Once accepted to the professional component, students complete their fourth year of undergraduate study at Rutgers SHRP. Upon completion of 38 credits at Rutgers SHRP, Fairleigh Dickinson University will award the B.S. in biology degree.

After earning the B.S. degree, students are required to successfully complete an additional 72 credits in the D.P.T. program at Rutgers SHRP, upon which Rutgers SHRP will award the D.P.T. degree.

### Admission Requirements for the D.P.T. Program of Rutgers SHRP

- Completion of all the University and Core requirements at FDU while maintaining an overall grade point ratio (GPR) of 3.00;
  - A minimum GPR of 3.00 in all required science and mathematics courses;
  - Demonstrated knowledge of the physical therapy profession through actual work or volunteer experience;

# Combined Degree Programs

B.S. in Biology/Doctor of Podiatric Medicine

- Evidence of community service;
- Formal application to the Rutgers SHRP Physical Therapy Program for the professional component of the program;
- Satisfactory scores on all three sections (verbal, quantitative and analytical) of the Graduate Record Examination (GRE);
- Three letters of recommendation; and
- Basic computer literacy, including file management, use of word processing and spreadsheet programs and use of email and internet.

## Undergraduate Sequence

### Metropolitan Campus

| 1st Semester                                       | Credits |
|--|---------|
| BIOL1251, BIOL1253                                 |         |
| General Biology I<br>(Lecture and Laboratory)..... | 4       |
| CHEM1201   |         |
| General Chemistry I.....                           | 3       |
| CHEM1205   |         |
| General Chemistry Laboratory I.....                | 1       |
| ENWR1101   |         |
| Academic Writing.....                              | 3       |
| MATH1107   |         |
| Precalculus.....                                   | 4       |
| UNIV1001   |         |
| Transitioning to University Life.....              | 1       |
| Total.....   | 16      |

### 2nd Semester

|   |    |
|---|----|
| BIOL1252, BIOL1254                                  |    |
| General Biology II<br>(Lecture and Laboratory)..... | 4  |
| CHEM1202  |    |
| General Chemistry II.....                           | 3  |
| CHEM1204  |    |
| General Chemistry Laboratory II.....                | 1  |
| ENWR1102  |    |
| Academic Research and Writing.....                  | 3  |
| MATH1201  |    |
| Calculus I.....                                     | 4  |
| UNIV1002  |    |
| Preparing for Professional Life.....                | 1  |
| Total.....  | 16 |

| 3rd Semester  | Credits |
|---|---------|
| BIOL2203, BIOL2223  |         |
| Human Anatomy and Physiology I<br>(Lecture and Laboratory)..... | 4       |
| CHEM2261  |         |
| Organic Chemistry I.....  | 3       |
| CHEM2263  |         |
| Organic Chemistry Laboratory I.....                             | 2       |
| CSCI1105  |         |
| Survey of Computers and<br>Computer Software.....               | 3       |
| UNIV2001  |         |
| Cross-cultural Perspectives.....                                | 3       |
| Oral Communication Elective.....                                | 3       |
| Total.....  | 18      |

### 4th Semester

|  |    |
|--|----|
| BIOL2204, BIOL2224   |    |
| Human Anatomy and Physiology II<br>(Lecture and Laboratory)..... | 4  |
| CHEM2262   |    |
| Organic Chemistry II.....  | 3  |
| CHEM2264   |    |
| Organic Chemistry Laboratory II.....                             | 2  |
| PSYC1103   |    |
| General Psychology I.....  | 3  |
| UNIV2002   |    |
| Global Issues.....   | 3  |
| Total.....   | 15 |

### 5th Semester

|   |    |
|---|----|
| ENGL2201                                |    |
| Masterpieces of World Literature I..... | 3  |
| MEDT1130                                |    |
| Bioethics.....                          | 3  |
| PHYS2201                                |    |
| Physics Laboratory I.....               | 1  |
| PHYS2203                                |    |
| University Physics I.....               | 3  |
| PSYC2201                                |    |
| Statistics.....                         | 3  |
| Total.....                              | 13 |

### 6th Semester

|   |    |
|---|----|
| BIOL2125, BIOL2126  |    |
| Microbiology for the Health Sciences<br>(Lecture and Laboratory)..... | 4  |
| NURS3208  |    |
| Introduction to Health Care<br>Economics.....                         | 3  |
| NURS4420  |    |
| Health Care Management.....   | 3  |
| PHYS2202  |    |
| Physics Laboratory II.....  | 1  |
| PHYS2204  |    |
| University Physics II.....  | 3  |
| Total.....  | 14 |

## B.S. in Biology/Doctor of Podiatric Medicine Seven-year Program

(with New York College of Podiatric Medicine)

This accelerated, combined degree program provides qualified students the opportunity to complete a baccalaureate degree and a Doctor of Podiatric Medicine (D.P.M.) degree in seven years, one year less than the normal span of eight years. The bachelor's degree (B.S. in biology) is awarded by Fairleigh Dickinson University and the doctoral degree (D.P.M.) by New York College of Podiatric Medicine.

Students are admitted at FDU as incoming freshmen or qualified transfer students. They may apply for the B.S. degree upon successful completion of six semesters at FDU, including the courses listed below, and the first year of study (three semesters) at New York College of Podiatric Medicine. A maximum of 32 credits from New York College of Podiatric Medicine may be transferred toward completion of the B.S. degree at FDU.

## Admission to the Combined Degree Program

High school seniors who satisfy the requirements for admission to the FDU preprofessional program may apply for admission to the combined degree program.

All applicants for admission to the combined degree program must satisfy secondary school preparation in English, mathematics, biology, chemistry and physics. The high school grade point average (GPA) and rank in class, along with letters of recommendation from high school teachers, will be of primary importance in evaluating applicants' credentials. Applicants are required to submit score in the verbal and mathematical components of the SAT.

After preliminary screening of the applications by the FDU Office of Admissions, qualified applicants will be invited for an interview with the FDU/New York College of Podiatric Medicine Joint Admissions Committee.

# Combined Degree Programs

B.S. in Biology/Doctor of Podiatric Medicine

## Combined Degree Program Requirements

While enrolled at FDU, students are required to follow the accelerated preprofessional curriculum in biology and are expected to maintain a minimum cumulative grade point ratio of 3.25 or higher in all course work and a minimum of C in all science and mathematics courses.

## Qualifying for Enrollment at New York College of Podiatric Medicine

Qualified students enrolled in the combined degree program will be guaranteed a seat at New York College of Podiatric Medicine for training in podiatry. To qualify, students must meet the following criteria:

- Completion of all FDU curriculum requirements, including the general education requirements and the degree program requirements for the major and all prerequisite courses required for admission to New York College of Podiatric Medicine. Students need to obtain a grade of C or higher in required courses;

- A grade point ratio (GPR) of 3.00 or higher;

- Submission of a satisfactory Medical College Admission Test (MCAT) score (at least equal to the current minimum) in a timely fashion;

- A satisfactory evaluation in a personal interview;

- At least three letters of evaluation;

- Students currently enrolled at FDU who seek admission to the combined degree program must apply to the School of Natural Sciences, University College: Arts • Sciences • Professional Studies, Metropolitan Campus, Teaneck, N.J., or the department of biological and allied health sciences at the Florham Campus, Madison, N.J., prior to the completion of 60 credit hours at FDU or at least one year before the anticipated date of matriculation at New York College of Podiatric Medicine; and

Students enrolled in the combined degree program who decide to complete the B.S. degree at FDU prior to entering New York College of Podiatric Medicine must make this known to their school director or department chair prior to the completion of 60 credits at FDU or at least one year before the anticipated date of matriculation at New York College of Podiatric Medicine.

## Prepodiatry Curriculum

Under the provisions of the prepodiatry program, students matriculate in the School of Natural Sciences of University College: Arts • Sciences • Professional Studies, Metropolitan Campus, or the department of biological and allied health sciences, Florham Campus, for a minimum of 96 credits (University College) and 98 credits (Becton College) of course work leading to the B.S. in biology (preprofessional option). The curriculum is as follows:

### Florham Campus

#### Biology Requirements

|  | Credits |
|--|---------|
| BIOL1201, BIOL1203<br>Biological Diversity<br>(Lecture and Laboratory).....                          | 4       |
| BIOL1202, BIOL1204<br>Introduction to Molecules, Cells<br>and Genes (Lecture and<br>Laboratory)..... | 4       |
| BIOL2003, BIOL2004<br>Cell Biology (Lecture and Laboratory)....                                      | 4       |
| BIOL3009, BIOL3019<br>Microbiology (Lecture and<br>Laboratory).....                                  | 4       |
| BIOL3253, BIOL3254<br>Comparative Anatomy<br>(Lecture and Laboratory).....                           | 4       |
| BIOL3256, BIOL3257<br>Genetics (Lecture and Laboratory).....   | 4       |
| BIOL3337, BIOL3327<br>General Physiology<br>(Lecture and Laboratory).....                            | 4       |

#### Cognate Requirements

##### (Chemistry, Mathematics, Physics)

|   |   |
|---|---|
| CHEM1201, CHEM1202<br>General Chemistry I, II.....            | 6 |
| CHEM1203, CHEM1204<br>General Chemistry Laboratory I, II..... | 2 |
| CHEM2261, CHEM2262<br>Organic Chemistry I, II.....            | 6 |
| CHEM2263, CHEM2264<br>Organic Chemistry Laboratory I, II..... | 2 |
| CHEM3281<br>Biochemistry I.....                               | 3 |
| MATH1107<br>Precalculus.....                                  | 4 |
| MATH1135<br>Applied Statistics.....                           | 3 |
| MATH1203<br>Calculus I.....                                   | 4 |

Students must complete the general education course plan (see page 55) as well.

## Metropolitan Campus

### 1st Semester

|   | Credits   |
|---|-----------|
| BIOL1251<br>General Biology I.....                | 3         |
| BIOL1253<br>Laboratory: General Biology I.....    | 1         |
| CHEM1201<br>General Chemistry I.....              | 3         |
| CHEM1203<br>General Chemistry Laboratory I.....   | 1         |
| ENWR1101<br>Academic Writing.....                 | 3         |
| UNIV1001<br>Transitioning to University Life..... | 1         |
| <b>Total.....</b>                                 | <b>12</b> |

### 2nd Semester

|  |           |
|--|-----------|
| BIOL1252<br>General Biology II.....              | 3         |
| BIOL1254<br>Laboratory: General Biology II.....  | 1         |
| CHEM1202<br>General Chemistry II.....            | 3         |
| CHEM1204<br>General Chemistry Laboratory II..... | 1         |
| ENWR1102<br>Academic Research and Writing.....   | 3         |
| UNIV1002<br>Preparing for Professional Life..... | 1         |
| Mathematics Sequence.....                        | 4         |
| <b>Total.....</b>                                | <b>16</b> |

### 3rd Semester

|  |           |
|--|-----------|
| BIOL2150, BIOL2250<br>Ecology and Field Biology<br>(Lecture and Laboratory)..... | 4         |
| CHEM2261<br>Organic Chemistry I.....   | 3         |
| CHEM2263<br>Organic Chemistry Laboratory I.....                                  | 2         |
| ENGL2201<br>Masterpieces of World Literature I.....                              | 3         |
| Mathematics Sequence.....  | 4         |
| <b>Total.....</b>  | <b>16</b> |

### 4th Semester

|  |           |
|--|-----------|
| BIOL2210, BIOL2211<br>Genetics (Lecture and Laboratory)..... | 4         |
| BIOL2300<br>Experimental Design.....                         | 3         |
| CHEM2262<br>Organic Chemistry II.....                        | 3         |
| CHEM2264<br>Organic Chemistry Laboratory II.....             | 2         |
| ENGL2202<br>Masterpieces of World Literature II.....         | 3         |
| UNIV2002<br>Global Issues.....                               | 3         |
| <b>Total.....</b>  | <b>18</b> |

# Combined Degree Programs

B.S. in Biology/Doctor of Veterinary Medicine

| <b>5th Semester</b>   | Credits |
|---|---------|
| BIOL2237, BIOL2239  |         |
| Human Structure and Function<br>(Lecture and Laboratory)..... | 4       |
| BIOL3225, BIOL3226  |         |
| General Microbiology<br>(Lecture and Laboratory).....         | 4       |
| BIOL4900  |         |
| Biology Seminar I.....  | 1       |
| PHYS2201  |         |
| Physics Laboratory I.....                                     | 1       |
| PHYS2203  |         |
| University Physics I.....                                     | 3       |
| UNIV2001  |         |
| Cross-cultural Perspectives.....                              | 3       |
| Total.....  | 16      |

| <b>6th Semester</b>              |    |
|----------------------------------|----|
| BIOL4240, BIOL4241               |    |
| Molecular Cell Biology.....      | 4  |
| BIOL4405                         |    |
| Ethics in Science.....           | 3  |
| CHEM3281                         |    |
| Biochemistry I.....              | 3  |
| PHYS2202                         |    |
| Physics Laboratory II.....       | 1  |
| PHYS2204                         |    |
| University Physics II.....       | 3  |
| Oral Communication Elective..... | 3  |
| Total.....                       | 17 |

## **B.S. in Biology/Doctor of Veterinary Medicine Seven-year Program**

*(with Ross University School of Veterinary Medicine, Basseterre, St. Kitts, West Indies)*

This accelerated, combined degree program provides qualified students the opportunity to complete a baccalaureate degree and a Doctor of Veterinary Medicine (D.V.M.) degree in seven years, one year less than the normal span of eight years. The bachelor's degree (B.S. in biology) is awarded by Fairleigh Dickinson University and the doctoral degree (D.V.M.) by Ross University. English is the teaching language.

Students are admitted to FDU as incoming freshmen or qualified transfer students. They may apply for the B.S. degree upon successful completion of six semesters at FDU, including the courses listed below, and the first year of study (three semesters) at Ross University. A maximum of 32 credits from Ross University may be transferred toward completion of the B.S. degree at FDU.

The program prepares students interested in pursuing a Doctor of Veterinary Medicine degree to become successful veterinarians in the United States. The program is an accelerated program which takes a little more than three years. The last three semesters are spent on the campus of one of the U.S. veterinary schools affiliated with Ross University School of Veterinary Medicine. The U.S. Department of Education has certified Ross University School of Veterinary Medicine as an eligible institution for the Title IV U.S. Federal Family Education Loan program.

Website: <http://www.rossu.edu/vet/>.

### **Admission to the Combined Degree Program**

High school seniors with a combined SAT score of 1150 and higher and ranking in the top 25 percent of their class or qualified students who have completed their first year of college study with a grade point ratio (GPR) of 3.40 or higher may apply for admission to the combined degree program.

All applicants for admission to the combined degree program must satisfy secondary school preparation in English, mathematics, biology, chemistry and physics. The high school grade point aver-

age and rank in class, along with letters of recommendation from high school teachers, will be of primary importance in evaluating applicants' credentials. Applicants are required to submit scores in the verbal and mathematical components of the SAT.

After preliminary screening of the applications by the FDU Office of Admissions, qualified applicants will be invited for an interview with the FDU/Ross University Joint Admissions Committee.

### **Combined Degree Program Requirements**

While enrolled at FDU, students are required to follow the accelerated preprofessional curriculum in biology and are expected to maintain a minimum cumulative grade point ratio (CGPR) of 3.25 or higher in all course work and a minimum of 3.00 in prerequisite courses required by Ross University.

### **Qualifying for Enrollment at Ross University School of Veterinary Medicine**

Qualified students enrolled in the combined degree program will be guaranteed a seat at Ross University for training in veterinary medicine. To qualify, students must meet the following criteria:

- Completion of all FDU curriculum requirements, including the general education requirements and the degree program requirements for the major and all prerequisite courses required for admission at Ross University School of Veterinary Medicine. Students need to obtain a GPR of 3.00 or higher in prerequisite courses with no D or F in any of the courses;

- A GPR of 3.25 or higher;
- Submission of a satisfactory Graduate Record Examination (GRE) score in the 25th percentile or better in each category;

- Students currently enrolled at FDU who seek admission to the combined degree program must apply to the School of Natural Sciences, University College: Arts • Sciences • Professional Studies, Metropolitan Campus, Teaneck, N.J., or to the department of biological and allied health sciences, Maxwell Becton College of Arts and Sciences, Florham Campus, Madison, N.J., prior to the completion of 60 credit hours at FDU or at least one year before the anticipated date of matriculation at Ross University; and

# Combined Degree Programs

B.S. in Biology/Doctor of Veterinary Medicine

• Students enrolled in the combined degree program who decide to complete the B.S. degree at FDU prior to entering Ross University must make this known to their school director or department chair prior to the completion of 60 credits at FDU or at least one year before the anticipated date of matriculation at Ross University.

## Preveterinary Curricula

Under the provisions of the preveterinary program, students matriculate in either University College: Arts • Sciences • Professional Studies, Metropolitan Campus, or Maxwell Becton College of Arts and Sciences, Florham Campus, for a minimum of 96 credits of course work leading to the B.S. in biology (preprofessional option). The curriculum is as follows:

### Florham Campus

#### Biology Requirements Credits

|  |   |
|--|---|
| BIOL1201, BIOL1203   |   |
| Biological Diversity<br>(Lecture and Laboratory).....                          | 4 |
| BIOL1202, BIOL1204   |   |
| Introduction to Molecules, Cells<br>and Genes (Lecture and<br>Laboratory)..... | 4 |
| BIOL2003, BIOL2004   |   |
| Cell Biology (Lecture and Laboratory)...                                       | 4 |
| BIOL3253, BIOL3254   |   |
| Comparative Anatomy<br>(Lecture and Laboratory).....                           | 4 |
| BIOL3256, BIOL3257   |   |
| Genetics (Lecture and Laboratory).....   | 4 |
| BIOL3337, BIOL3327   |   |
| General Physiology<br>(Lecture and Laboratory).....                            | 4 |

#### Cognate Requirements

##### (Chemistry, Mathematics, Physics)

|   |   |
|---|---|
| CHEM1201, CHEM1202                      |   |
| General Chemistry I, II.....            | 6 |
| CHEM1205, CHEM1204                      |   |
| General Chemistry Laboratory I, II..... | 2 |
| CHEM2261, CHEM2262                      |   |
| Organic Chemistry I, II.....            | 6 |
| CHEM2263, CHEM2264                      |   |
| Organic Chemistry Laboratory I, II..... | 2 |
| CHEM3281                                |   |
| Biochemistry I.....                     | 3 |
| MATH1107                                |   |
| Precalculus.....                        | 4 |
| MATH1133                                |   |
| Applied Statistics.....                 | 3 |
| MATH1203                                |   |
| Calculus I.....                         | 4 |

**Students must complete the general education course plan (see page 55) as well, including these specific classes:**

|                                  |         |
|----------------------------------|---------|
|                                  | Credits |
| PHIL1440                         |         |
| Biomedical Ethics.....           | 3       |
| SPCH1107                         |         |
| Fundamentals of Speech<br>or     |         |
| COMM2009                         |         |
| Professional Communications..... | 3       |

### Metropolitan Campus

#### 1st Semester

|                                       |    |
|---------------------------------------|----|
| BIOL1251                              |    |
| General Biology I.....                | 3  |
| BIOL1253                              |    |
| Laboratory: General Biology I.....    | 1  |
| CHEM1201                              |    |
| General Chemistry I.....              | 3  |
| CHEM1203                              |    |
| General Chemistry Laboratory I.....   | 1  |
| ENWR1101                              |    |
| Academic Writing.....                 | 3  |
| UNIV1001                              |    |
| Transitioning to University Life..... | 1  |
| Total.....                            | 12 |

#### 2nd Semester

|                                      |    |
|--------------------------------------|----|
| BIOL1252                             |    |
| General Biology II.....              | 3  |
| BIOL1254                             |    |
| Laboratory: General Biology II.....  | 1  |
| CHEM1202                             |    |
| General Chemistry II.....            | 3  |
| CHEM1204                             |    |
| General Chemistry Laboratory II..... | 1  |
| ENWR1102                             |    |
| Academic Research and Writing.....   | 3  |
| UNIV1002                             |    |
| Preparing for Professional Life..... | 1  |
| Mathematics Sequence.....            | 4  |
| Total.....                           | 16 |

#### 3rd Semester

|  |    |
|--|----|
| BIOL2150, BIOL2250   |    |
| Ecology and Field Biology<br>(Lecture and Laboratory)..... | 4  |
| CHEM2261   |    |
| Organic Chemistry I.....                                   | 3  |
| CHEM2263   |    |
| Organic Chemistry Laboratory I.....                        | 2  |
| ENGL2201   |    |
| Masterpieces of World Literature I.....                    | 3  |
| Mathematics Sequence.....                                  | 4  |
| Total.....   | 16 |

### 4th Semester

|  |    |
|--|----|
| BIOL2210, BIOL2211                       |    |
| Genetics (Lecture and Laboratory).....   | 4  |
| BIOL2300                                 |    |
| Experimental Design.....                 | 3  |
| CHEM2262                                 |    |
| Organic Chemistry II.....                | 3  |
| CHEM2264                                 |    |
| Organic Chemistry Laboratory II.....     | 2  |
| ENGL2202                                 |    |
| Masterpieces of World Literature II..... | 3  |
| UNIV2002                                 |    |
| Global Issues.....                       | 3  |
| Total.....                               | 18 |

### 5th Semester

|   |    |
|---|----|
| BIOL2237, BIOL2239  |    |
| Human Structure and Function<br>(Lecture and Laboratory)..... | 4  |
| BIOL3225, BIOL3226  |    |
| General Microbiology<br>(Lecture and Laboratory).....         | 4  |
| BIOL4900  |    |
| Biology Seminar I.....  | 1  |
| PHYS2201  |    |
| Physics Laboratory I.....                                     | 1  |
| PHYS2203  |    |
| University Physics I.....                                     | 3  |
| UNIV2001  |    |
| Cross-cultural Perspectives.....                              | 3  |
| Total.....  | 16 |

### 6th Semester

|   |    |
|---|----|
| BIOL4240, BIOL4241                                      |    |
| Molecular Cell Biology<br>(Lecture and Laboratory)..... | 4  |
| BIOL4405  |    |
| Ethics in Science.....                                  | 3  |
| CHEM3281  |    |
| Biochemistry I.....                                     | 3  |
| PHYS2202  |    |
| Physics Laboratory II.....                              | 1  |
| PHYS2204  |    |
| University Physics II.....                              | 3  |
| Oral Communication Elective.....                        | 3  |
| Total.....  | 17 |

# Combined Degree Programs

B.S. in Chemistry/Doctor of Pharmacy

## B.S. in Chemistry/Doctor of Pharmacy

### Seven-year Program

(with FDU School of Pharmacy and Health Sciences, Fairleigh Dickinson University)

Fairleigh Dickinson University sophomores and high school seniors can apply to the the B.S. in chemistry plus Pharm.D. combined program (3+4) offered by the School of Pharmacy and Health Sciences.

Sophomore applicants studying chemistry (minimum of 30 credits, maximum of 60 credits), and maintaining a 3.30 grade point ratio must also have a grade of B- or better in all prerequisite college courses. The program is even more competitive for high school students seeking admission: students must have an SAT score of 1150 or higher (on the 1600 scale) and a 3.50 grade point average.

The program is structured so that students complete three years of undergraduate work in a “feeder” science major through the Maxwell Becton College of Arts and Sciences or University College: Arts • Sciences • Professional Studies before transitioning to the School of Pharmacy and Health Sciences to begin four years of graduate work. They ultimately achieve both a Bachelor of Science and Doctor of Pharmacy.

### Metropolitan Campus

A minimum of 120 credits for the B.S. degree; 100–104 of these are taken at the Metropolitan Campus in years 1–3 + 28 credits (to be approved by the department chair/director) in year 4 at FDU’s School of Pharmacy and Health Sciences. Students not accepted into FDU’s School of Pharmacy and Health Sciences have the option of switching out of the B.S. in chemistry/Pharm.D. combined degree and into another concentration.

## B.S. in Chemistry and Doctor of Pharmacy Combined Degree

| 1st Semester                        | Credits |
|-------------------------------------|---------|
| BIOL1251                            |         |
| General Biology I.....              | 3       |
| BIOL1253                            |         |
| Laboratory: General Biology I.....  | 1       |
| CHEM1201                            |         |
| General Chemistry I.....            | 3       |
| CHEM1205                            |         |
| General Chemistry Laboratory I..... | 1       |

|                                       | Credits |
|---------------------------------------|---------|
| ENWR1101                              |         |
| Academic Writing.....                 | 3       |
| MATH1201                              |         |
| Calculus I.....                       | 4       |
| UNIV1001                              |         |
| Transitioning to University Life..... | 1       |
| Total.....                            | 16      |

### 2nd Semester

|                                      |    |
|--------------------------------------|----|
| BIOL1252                             |    |
| General Biology II.....              | 3  |
| BIOL1254                             |    |
| Laboratory: General Biology II.....  | 1  |
| CHEM1202                             |    |
| General Chemistry II.....            | 3  |
| CHEM1204                             |    |
| General Chemistry Laboratory II..... | 1  |
| ENWR1102                             |    |
| Academic Research and Writing.....   | 3  |
| MATH2202                             |    |
| Calculus II.....                     | 4  |
| UNIV1002                             |    |
| Preparing for Professional Life..... | 1  |
| Total.....                           | 16 |

### 3rd Semester

|   |    |
|---|----|
| CHEM2261                                |    |
| Organic Chemistry I.....                | 3  |
| CHEM2263                                |    |
| Organic Chemistry Laboratory I.....     | 2  |
| ENGL2201                                |    |
| Masterpieces of World Literature I..... | 3  |
| PHYS2201                                |    |
| Physics Laboratory I.....               | 1  |
| PHYS2203                                |    |
| University Physics I.....               | 3  |
| UNIV2001                                |    |
| Cross-cultural Perspectives.....        | 3  |
| Total.....                              | 15 |

### 4th Semester

|  |    |
|--|----|
| CHEM2262                                 |    |
| Organic Chemistry II.....                | 3  |
| CHEM2264                                 |    |
| Organic Chemistry Laboratory II.....     | 2  |
| ENGL2202                                 |    |
| Masterpieces of World Literature II..... | 3  |
| PHYS2202                                 |    |
| Physics Laboratory II.....               | 1  |
| PHYS2204                                 |    |
| University Physics II.....               | 3  |
| SPCH                                     |    |
| Oral Communication Elective*.....        | 3  |
| UNIV2002                                 |    |
| Global Issues.....                       | 3  |
| Total.....                               | 18 |

\*Requirements consist of a three-credit Speech course.

| 5th Semester   | Credits |
|--|---------|
| BIOL2203, BIOL2223   |         |
| Human Anatomy and Physiology I<br>(Lecture and Laboratory).....              | 4       |
| BIOL4405   |         |
| Ethics in Science.....   | 3       |
| CHEM3241, CHEM3243   |         |
| Physical Chemistry I<br>(Lecture and Laboratory)<br>or<br>CHEM4233, CHEM4234 |         |
| Instrumental Analysis<br>(Lecture and Laboratory).....                       | 5       |
| MATH2337   |         |
| Applied Statistics I.....  | 3       |
| Total.....   | 15      |

### 6th Semester

|  |    |
|--|----|
| BIOL2204, BIOL2224   |    |
| Human Anatomy and Physiology II<br>(Lecture and Laboratory)..... | 4  |
| CHEM3231, CHEM3232   |    |
| Analytical Chemistry<br>(Lecture and Laboratory).....            | 4  |
| BIOL4901   |    |
| Biology Seminar II.....  | 1  |
| or<br>CHEM3242, CHEM3244   |    |
| Physical Chemistry II<br>(Lecture and Laboratory).....           | 5  |
| CHEM3281   |    |
| Biochemistry I.....  | 3  |
| Free Elective.....   | 3  |
| Total.....   | 15 |

### 7th Semester

|   |   |
|---|---|
| PHRM6100  |   |
| Foundations in Pharmaceutical<br>Science: Pharmacology,<br>Medicinal Chemistry,<br>Pharmacokinetics.....                                      | 4 |
| PHRM6101  |   |
| Foundations in Integrated<br>Pharmacotherapy I: An<br>Introduction to Pathophysiology,<br>Genetics, Microbiology and<br>Delivery of Care..... | 3 |
| PHRM6201  |   |
| Pharmaceutics I: Physical Pharmacy.....   | 3 |
| PHRM6211  |   |
| Pharmaceutical Calculations I.....  | 1 |
| PHRM6301  |   |
| Medical Communication and<br>Technical Writing.....   | 2 |
| PHRM6321  |   |
| Pharmacy Care Law and Ethics.....   | 3 |
| PHRM6401  |   |
| Professional Pharmacy Practice I:<br>Health Care Delivery.....  | 3 |



# Combined Degree Programs

B.S. in Chemistry/Doctor of Pharmacy

|                                      | Credits |   | Credits |   | Credits |
|--------------------------------------|---------|---|---------|---|---------|
| PHRM6700                             |         | PHRM7111                                |         | PHRM8402                                |         |
| Beyond the Curriculum:               |         | Integrated Pharmacotherapy V–VI:        |         | Professional Pharmacy Practice IV:      |         |
| Foundations in Pharmacy              |         | Conceptual Connections and              |         | Pharmacy Leadership and                 |         |
| Education.....0                      |         | Patient Care.....2                      |         | Management.....2                        |         |
| Total.....19                         |         | PHRM7112                                |         | PHRM8700                                |         |
|                                      |         | Integrated Pharmacotherapy              |         | Beyond the Curriculum/                  |         |
| <b>8th Semester</b>                  |         | VII–VIII: Conceptual                    |         | Preparing Practitioners.....0           |         |
| PHRM6102                             |         | Connections and Patient Care.....2      |         | PHRM8701                                |         |
| Integrated Pharmacotherapy II:       |         | PHRM7201                                |         | Beyond the Curriculum/                  |         |
| Gastrointestinal.....3               |         | Pharmaceutical Dispensing and           |         | Preparing Practitioners.....1           |         |
| PHRM6103                             |         | Compounding.....1                       |         | PHRM8900                                |         |
| Integrated Pharmacotherapy III:      |         | PHRM7202                                |         | Pharmacy Capstone.....2                 |         |
| Dermatology, Over-the-Counter        |         | Pharmaceutics III: Sterile Products     |         | PHRM9101                                |         |
| Remedies and Self Care.....3         |         | and Biopharmaceuticals.....3            |         | Advanced Pharmacy Practice              |         |
| PHRM6104                             |         | PHRM7301                                |         | Experience (APPE) I: Community....5     |         |
| Integrated Pharmacotherapy IV:       |         | Biostatistics.....2                     |         | PHRM9102                                |         |
| Cardiology.....4                     |         | PHRM7302                                |         | Advanced Pharmacy Practice              |         |
| PHRM6111                             |         | Epidemiology and Study Design           |         | Experience (APPE) II: Institutional...5 |         |
| Integrated Pharmacotherapy II–IV:    |         | Evaluation.....3                        |         | PHRM9103                                |         |
| Conceptual Connections and           |         | PHRM7401                                |         | Advanced Pharmacy Practice              |         |
| Patient Care.....2                   |         | Professional Pharmacy Practice          |         | Experience (APPE) III:                  |         |
| PHRM6202                             |         | III: Pharmaceutical Informatics         |         | Ambulatory Care.....5                   |         |
| Pharmaceutics II: Dosage Forms       |         | and Drug Information.....2              |         | PHRM9104                                |         |
| and Drug Delivery Technology.....3   |         | PHRM7501                                |         | Advanced Pharmacy Practice              |         |
| PHRM6402                             |         | Introductory Pharmacy Practice          |         | Experience (APPE) IV: Acute Care...5    |         |
| Professional Pharmacy Practice II:   |         | Experience (IPPE) II: Institutional...3 |         | PHRM9201                                |         |
| Communication in Health Care.....2   |         | PHRM7700                                |         | Advanced Pharmacy Practice              |         |
| PHRM6701                             |         | Beyond the Curriculum:                  |         | Experience (APPE) V: Elective –         |         |
| Beyond the Curriculum:               |         | Expanding Horizons.....0                |         | Community Practice I.....5              |         |
| Foundations in Pharmacy              |         | PHRM7701                                |         | PHRM9203                                |         |
| Education.....1                      |         | Beyond the Curriculum: Expanding        |         | Advanced Pharmacy Practice              |         |
| Total.....18                         |         | Horizons.....1                          |         | Experience (APPE) V: Elective –         |         |
|                                      |         | PHRM8109                                |         | Ambulatory Care I.....5                 |         |
| <b>School of Pharmacy and Health</b> |         | Integrated Pharmacotherapy IX:          |         | PHRM9205                                |         |
| <b>Sciences Courses for All</b>      |         | Autoimmune Diseases, Rare               |         | Advanced Pharmacy Practice              |         |
| <b>Undergraduate Majors</b>          |         | Diseases and Special Populations.....3  |         | Experience (APPE) V: Elective –         |         |
| <b>Years 5 through 7</b>             |         | PHRM8110                                |         | Community Compounding I.....5           |         |
| PHRM6501                             |         | Integrated Pharmacotherapy X:           |         | PHRM9207                                |         |
| Introductory Pharmacy Practice       |         | Hematology and Oncology.....3           |         | Advanced Pharmacy Practice              |         |
| Experience (IPPE) I: Community.....3 |         | PHRM8111                                |         | Experience (APPE) V: Elective –         |         |
| PHRM7105                             |         | Integrated Pharmacotherapy IX–X:        |         | Medication Therapy                      |         |
| Integrated Pharmacotherapy V:        |         | Conceptual Connections and              |         | Management I.....5                      |         |
| Neurology, Psychiatry and            |         | Patient Care.....2                      |         | PHRM9209                                |         |
| Anesthesiology.....4                 |         | PHRM8112                                |         | Advanced Pharmacy Practice              |         |
| PHRM7106                             |         | Integrated Pharmacotherapy I–X:         |         | Experience (APPE) V: Elective –         |         |
| Integrated Pharmacotherapy VI:       |         | A Whole System Overview and             |         | HIV/AIDS I.....5                        |         |
| Infectious Disease.....4             |         | Effecting Patient Care.....2            |         | PHRM9211                                |         |
| PHRM7107                             |         | PHRM8201                                |         | Advanced Pharmacy Practice              |         |
| Integrated Pharmacotherapy VII:      |         | Pharmacogenomics and                    |         | Experience (APPE) V: Elective –         |         |
| Pulmonary, Eye, Ear, Nose            |         | Personalized Medicine.....2             |         | Home Infusion I.....5                   |         |
| and Throat.....3                     |         | PHRM8301                                |         | PHRM9301                                |         |
| Integrated Pharmacotherapy VIII:     |         | Pharmacoepidemiology,                   |         | Advanced Pharmacy Practice              |         |
| Endocrine, Urinary Tract,            |         | Pharmacoeconomics and                   |         | Experience (APPE) VI: Elective –        |         |
| Renal and Reproductive Health.....4  |         | Health Outcomes.....3                   |         | Hospital Practice I.....5               |         |
|                                      |         | PHRM8302                                |         | PHRM9303                                |         |
|                                      |         | Public Health and the Global            |         | Advanced Pharmacy Practice              |         |
|                                      |         | Mission of Pharmacy.....2               |         | Experience (APPE) VI: Elective –        |         |
|                                      |         |   |         | Acute Care I.....5                      |         |

# Combined Degree Programs

B.S. in Chemistry/Doctor of Pharmacy

| Credits |                                       | Credits |  | Credits |   |
|---------|---------------------------------------|---------|--|---------|---|
|         | PHRM9305                              |         | PHRM9507   |         | CHEM1202, CHEM1212                        |
|         | Advanced Pharmacy Practice            |         | Advanced Pharmacy Practice                                 |         | General Chemistry II.....3                |
|         | Experience (APPE) VI: Elective –      |         | Experience (APPE) VIII:                                    |         | CHEM1204                                  |
|         | Long Term Care I.....5                |         | Elective – Marketing I.....5                               |         | General Chemistry Laboratory II.....1     |
|         | PHRM9307                              |         | PHRM9509   |         | ENGW1102                                  |
|         | Advanced Pharmacy Practice            |         | Advanced Pharmacy Practice                                 |         | Research Writing Workshop.....3           |
|         | Experience (APPE) VI: Elective –      |         | Experience (APPE) VIII:                                    |         | MATH2202                                  |
|         | Infectious Disease I.....5            |         | Elective – Patient Advocacy I.....5                        |         | Calculus II.....4                         |
|         | PHRM9309                              |         | PHRM9511   |         | Total.....15                              |
|         | Advanced Pharmacy Practice            |         | Advanced Pharmacy Practice                                 |         | <b>3rd Semester</b>                       |
|         | Experience (APPE) VI: Elective –      |         | Experience (APPE) VIII:                                    |         | BIOL1205                                  |
|         | Oncology I.....5                      |         | Elective – Health Care                                     |         | Anatomy and Physiology I.....4            |
|         | PHRM9311                              |         | Organization Management I.....5                            |         | BIOL1207                                  |
|         | Advanced Pharmacy Practice            |         | PHRM9513   |         | Lab: Anatomy and Physiology I.....0       |
|         | Experience (APPE) VI: Elective –      |         | Advanced Pharmacy Practice                                 |         | CHEM2214                                  |
|         | Critical Care I.....5                 |         | Experience (APPE) VIII:                                    |         | Basic Inorganic Chemistry .....4          |
|         | PHRM9313                              |         | Elective – Informatics I.....5                             |         | CHEM2213                                  |
|         | Advanced Pharmacy Practice            |         | PHRM9515   |         | Lab: Basic Inorganic Chemistry .....0     |
|         | Experience (APPE) VI: Elective –      |         | Advanced Pharmacy Practice                                 |         | CHEM2261, CHEM2265                        |
|         | Cardiology I.....5                    |         | Experience (APPE) VIII:                                    |         | Organic Chemistry I.....3                 |
|         | PHRM9315                              |         | Elective – Management I.....5                              |         | CHEM2263                                  |
|         | Advanced Pharmacy Practice            |         | PHRM9517   |         | Organic Chemistry Laboratory I.....3      |
|         | Experience (APPE) VI: Elective –      |         | Advanced Pharmacy Practice                                 |         | PHYS2003, PHYS2023                        |
|         | Behavioral Health I.....5             |         | Experience (APPE) VIII:                                    |         | General Physics with Calculus I.....4     |
|         | PHRM9401                              |         | Elective – Regulatory I.....5                              |         | PHYS2013                                  |
|         | Advanced Pharmacy Practice            |         | <b>Florham Campus</b>                                      |         | Lab: General Physics with                 |
|         | Experience (APPE) VII: Elective –     |         | <b>B.S. in Chemistry and Doctor of</b>                     |         | Calculus I.....0                          |
|         | Drug Information I.....5              |         | <b>Pharmacy Combined Degree*</b>                           |         | Total.....16                              |
|         | PHRM9403                              |         | <b>1st Semester</b>  |         | <b>4th Semester</b>                       |
|         | Advanced Pharmacy Practice            |         | BIOL1201, BIOL1211   |         | BIOL1206                                  |
|         | Experience (APPE) VII: Elective –     |         | Biological Diversity.....4                                 |         | Anatomy and Physiology II.....4           |
|         | Medication Safety I.....5             |         | BIOL1203   |         | BIOL1208                                  |
|         | PHRM9405                              |         | Lab: Biological Diversity.....0                            |         | Lab: Anatomy and Physiology II.....0      |
|         | Advanced Pharmacy Practice            |         | CHEM1201, CHEM1211   |         | CHEM2262, CHEM2266                        |
|         | Experience (APPE) VII: Elective –     |         | General Chemistry I.....3                                  |         | Organic Chemistry II.....3                |
|         | Managed Care I.....5                  |         | CHEM1203   |         | CHEM2264                                  |
|         | PHRM9407                              |         | General Chemistry Laboratory I.....1                       |         | Lab: Organic Chemistry II.....1           |
|         | Advanced Pharmacy Practice            |         | ENGW1101   |         | MATH1133                                  |
|         | Experience (APPE) VII: Elective –     |         | College Writing Workshop.....3                             |         | Applied Statistics.....3                  |
|         | Specialty Pharmacy I.....5            |         | MATH1203   |         | PHYS2004, PHYS2024                        |
|         | PHRM9409                              |         | Calculus I.....4   |         | General Physics with Calculus II.....4    |
|         | Advanced Pharmacy Practice            |         | UNIV1001   |         | PHYS2014                                  |
|         | Experience (APPE) VII: Elective –     |         | Transitioning to University Life .....1                    |         | Lab: General Physics with Calculus II...0 |
|         | Medical Device/Patient Safety I.....5 |         | Total.....16   |         | Total.....15                              |
|         | PHRM9501                              |         | <b>2nd Semester</b>  |         | <b>5th Semester</b>                       |
|         | Advanced Pharmacy Practice            |         | BIOL1202, BIOL1212   |         | CHEM3241, CHEM3245                        |
|         | Experience (APPE) VIII:               |         | Introduction to Molecules, Cells                           |         | Physical Chemistry I.....3                |
|         | Elective – Public Health I.....5      |         | and Genes.....4  |         | CHEM3243                                  |
|         | PHRM9503                              |         | BIOL1204   |         | Lab: Physical Chemistry.....2             |
|         | Advanced Pharmacy Practice            |         | Introduction to Molecules, Cells                           |         | CHEM3281                                  |
|         | Experience (APPE) VIII:               |         | and Genes Lab.....0  |         | Biochemistry I.....3                      |
|         | Elective – Industry I.....5           |         | <b>*This is not American Chemical Society (ACS) certi-</b> |         | CHEM338                                   |
|         | PHRM9505                              |         | <b>fied.</b>   |         | Biochemistry Laboratory.....1             |
|         | Advanced Pharmacy Practice            |         |  |         |   |
|         | Experience (APPE) VIII:               |         |  |         |   |
|         | Elective – Research I.....5           |         |  |         |   |

# Combined Degree Programs

B.S. in Chemistry/Doctor of Pharmacy

|                                       | Credits |
|---------------------------------------|---------|
| UNIV1002                              |         |
| Preparing for Professional Life ..... | 1       |
| Language Course .....                 | 4       |
| Total.....                            | 14      |

## 6th Semester

|                                       |    |
|---------------------------------------|----|
| CHEM2221                              |    |
| Analytical Chemistry.....             | 4  |
| CHEM2223                              |    |
| Lab: Analytical Chemistry.....        | 0  |
| CHEM3242, CHEM3246                    |    |
| Physical Chemistry II.....            | 3  |
| CHEM3244                              |    |
| Physical Chemistry Laboratory II..... | 2  |
| ECON2001                              |    |
| Introduction to Microeconomics.....   | 3  |
| SPCH1107                              |    |
| Fundamentals of Speech.....           | 3  |
| Textual and Aesthetic Analysis.....   | 3  |
| Total.....                            | 18 |

## 7th Semester

|   |    |
|---|----|
| PHRM6100  |    |
| Foundations in Pharmaceutical<br>Science: Pharmacology,<br>Medicinal Chemistry,<br>Pharmacokinetics .....                                     | 4  |
| PHRM6101  |    |
| Foundations in Integrated<br>Pharmacotherapy I: An<br>Introduction to Pathophysiology,<br>Genetics, Microbiology and<br>Delivery of Care..... | 3  |
| PHRM6201  |    |
| Pharmaceutics I: Physical Pharmacy.....   | 3  |
| PHRM6211  |    |
| Pharmaceutical Calculations I.....  | 1  |
| PHRM6301  |    |
| Medical Communication and<br>Technical Writing .....  | 2  |
| PHRM6321  |    |
| Pharmacy Care Law and Ethics .....  | 3  |
| PHRM6401  |    |
| Professional Pharmacy Practice I:<br>Health Care Delivery.....  | 3  |
| PHRM6700  |    |
| Beyond the Curriculum:<br>Foundations in Pharmacy<br>Education.....   | 0  |
| Total.....  | 19 |

## 8th Semester

|  |   |
|--|---|
| PHRM6102   |   |
| Integrated Pharmacotherapy II:<br>Gastrointestinal.....  | 3 |
| PHRM6105   |   |
| Integrated Pharmacotherapy III:<br>Dermatology, Over-the-Counter<br>Remedies and Self Care ..... | 3 |

|  | Credits |
|--|---------|
| PHRM6104   |         |
| Integrated Pharmacotherapy IV:<br>Cardiology.....                                    | 4       |
| PHRM6111   |         |
| Integrated Pharmacotherapy II-IV:<br>Conceptual Connections and<br>Patient Care..... | 2       |
| PHRM6202   |         |
| Pharmaceutics II: Dosage Forms<br>and Drug Delivery Technology.....                  | 3       |
| PHRM6212   |         |
| Pharmaceutical Calculations II.....  | 1       |
| PHRM6402   |         |
| Professional Pharmacy Practice II:<br>Communication in Health Care.....              | 2       |
| PHRM6701   |         |
| Beyond the Curriculum:<br>Foundations in Pharmacy<br>Education.....                  | 1       |
| Total.....   | 19      |

## School of Pharmacy and Health Sciences Courses for All Undergraduate Majors Years 5 through 7

|   |   |
|---|---|
| PHRM6501  |   |
| Introductory Pharmacy Practice<br>Experience (IPPE) I: Community.....                               | 3 |
| PHRM7105  |   |
| Integrated Pharmacotherapy V:<br>Neurology, Psychiatry and<br>Anesthesiology.....                   | 4 |
| PHRM7106  |   |
| Integrated Pharmacotherapy VI:<br>Infectious Disease.....   | 4 |
| PHRM7107  |   |
| Integrated Pharmacotherapy VII:<br>Pulmonary, Eye, Ear, Nose<br>and Throat .....                    | 3 |
| PHRM7108  |   |
| Integrated Pharmacotherapy VIII:<br>Endocrine, Urinary Tract,<br>Renal and Reproductive Health..... | 4 |
| PHRM7111  |   |
| Integrated Pharmacotherapy V-VI:<br>Conceptual Connections and<br>Patient Care.....                 | 2 |
| PHRM7112  |   |
| Integrated Pharmacotherapy<br>VII-VIII: Conceptual<br>Connections and Patient Care.....             | 2 |
| PHRM7201  |   |
| Pharmaceutical Dispensing and<br>Compounding.....   | 1 |
| PHRM7202  |   |
| Pharmaceutics III: Sterile Products<br>and Biopharmaceuticals.....                                  | 3 |

|  | Credits |
|--|---------|
| PHRM7301   |         |
| Biostatistics.....   | 2       |
| PHRM7302   |         |
| Epidemiology and Study Design<br>Evaluation.....   | 3       |
| PHRM7401   |         |
| Professional Pharmacy Practice<br>III: Pharmaceutical Informatics<br>and Drug Information.....       | 2       |
| PHRM7501   |         |
| Introductory Pharmacy Practice<br>Experience (IPPE) II: Institutional....                            | 3       |
| PHRM7700   |         |
| Beyond the Curriculum:<br>Expanding Horizons.....  | 0       |
| PHRM7701   |         |
| Beyond the Curriculum: Expanding<br>Horizons .....   | 1       |
| PHRM8109   |         |
| Integrated Pharmacotherapy IX:<br>Autoimmune Diseases, Rare<br>Diseases and Special Populations..... | 3       |
| PHRM8110   |         |
| Integrated Pharmacotherapy X:<br>Hematology and Oncology.....  | 3       |
| PHRM8111   |         |
| Integrated Pharmacotherapy IX-X:<br>Conceptual Connections and<br>Patient Care .....                 | 2       |
| PHRM8112   |         |
| Integrated Pharmacotherapy I-X:<br>A Whole System Overview and<br>Effecting Patient Care .....       | 2       |
| PHRM8201   |         |
| Pharmacogenomics and<br>Personalized Medicine.....   | 2       |
| PHRM8301   |         |
| Pharmacoepidemiology,<br>Pharmacoeconomics and<br>Health Outcomes.....                               | 3       |
| PHRM8302   |         |
| Public Health and the Global<br>Mission of Pharmacy.....   | 2       |
| PHRM8402   |         |
| Professional Pharmacy Practice IV:<br>Pharmacy Leadership and<br>Management .....                    | 2       |
| PHRM8700   |         |
| Beyond the Curriculum/<br>Preparing Practitioners.....   | 0       |
| PHRM8701   |         |
| Beyond the Curriculum/<br>Preparing Practitioners.....   | 1       |
| PHRM8900   |         |
| Pharmacy Capstone.....   | 2       |
| PHRM9101   |         |
| Advanced Pharmacy Practice<br>Experience (APPE) I: Community.....                                    | 5       |

# Combined Degree Programs

B.S. in Chemistry/Doctor of Pharmacy

| Credits   | Credits  | Credits   |
|---|--|---|
| PHRM9102<br>Advanced Pharmacy Practice<br>Experience (APPE) II: Institutional...5                                     | PHRM9311<br>Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Critical Care I.....5                            | PHRM9513<br>Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Informatics I.....5 |
| PHRM9103<br>Advanced Pharmacy Practice<br>Experience (APPE) III:<br>Ambulatory Care.....5                             | PHRM9313<br>Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Cardiology I.....5                               | PHRM9515<br>Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Management I.....5  |
| PHRM9104<br>Advanced Pharmacy Practice<br>Experience (APPE) IV: Acute Care...5  | PHRM9315<br>Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Behavioral Health I.....5                        | PHRM9517<br>Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Regulatory I.....5  |
| PHRM9201<br>Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Community Practice I.....5               | PHRM9401<br>Advanced Pharmacy Practice<br>Experience (APPE) VII: Elective –<br>Drug Information I.....5                        |   |
| PHRM9203<br>Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Ambulatory Care I.....5                  | PHRM9403<br>Advanced Pharmacy Practice<br>Experience (APPE) VII: Elective –<br>Medication Safety I.....5                       |   |
| PHRM9205<br>Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Community Compounding I.....5            | PHRM9405<br>Advanced Pharmacy Practice<br>Experience (APPE) VII: Elective –<br>Managed Care I.....5                            |   |
| PHRM9207<br>Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Medication Therapy<br>Management I.....5 | PHRM9407<br>Advanced Pharmacy Practice<br>Experience (APPE) VII: Elective –<br>Specialty Pharmacy I.....5                      |   |
| PHRM9209<br>Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>HIV/AIDS I.....5                         | PHRM9409<br>Advanced Pharmacy Practice<br>Experience (APPE) VII: Elective –<br>Medical Device/Patient Safety I.....5           |   |
| PHRM9211<br>Advanced Pharmacy Practice<br>Experience (APPE) V: Elective –<br>Home Infusion I.....5                    | PHRM9501<br>Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Public Health I.....5                          |   |
| PHRM9301<br>Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Hospital Practice I.....5               | PHRM9503<br>Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Industry I.....5                               |   |
| PHRM9305<br>Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Acute Care I.....5                      | PHRM9505<br>Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Research I.....5                               |   |
| PHRM9305<br>Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Long Term Care I.....5                  | PHRM9507<br>Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Marketing I.....5                              |   |
| PHRM9307<br>Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Infectious Disease I.....5              | PHRM9509<br>Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Patient Advocacy I.....5                       |   |
| PHRM9309<br>Advanced Pharmacy Practice<br>Experience (APPE) VI: Elective –<br>Oncology I.....5                        | PHRM9511<br>Advanced Pharmacy Practice<br>Experience (APPE) VIII:<br>Elective – Health Care<br>Organization Management I.....5 |   |