College of Arts and Sciences

Donald E. Hall, dean; Diane T. Hyland, senior associate dean; Garth Isaak, associate dean; Cameron Wesson, associate dean; Jackie Krasas, associate dean.

The College of Arts and Sciences is the heart of Lehigh University offering a wide variety of academic majors, minors and programs, while also providing essential liberal arts access to all Lehigh students. Arts and Science faculty are engaged as active scholars, are highly accessible, and are committed to the teaching mission of our undergraduate programs. A hallmark of our college is the faculty’s ability to engage students interactively and experientially in research and scholarship.

Students in the College develop new habits of mind that characterize the liberal arts education, such as testing assumptions, respecting evidence, and probing the unknown with curiosity and an open mind. Those habits prepare our graduates to thrive in an uncertain world. Through a combination of college-wide distribution requirements and major field requirements, Lehigh Arts and Sciences students investigate and acquire knowledge of human cultures and the physical and natural world by studying arts and humanities, mathematics, natural sciences, and social sciences.

Studying broadly in the areas above and concentrating deeply in a major field will help develop intellectual traits and skills needed to create the lifelong learning habits necessary to confront constantly changing social conditions, emerging technologies, careers and lives.

The College of Arts and Sciences offers several curricular options:

- A four-year arts and sciences curriculum leading to a bachelor of arts or bachelor of science degree in designated fields
- A five-year arts-engineering curriculum leading to a bachelor’s degree from the College of Arts and Sciences and a bachelor of science degree from the College of Engineering and Applied Science
- Double degree programs within the college and in conjunction with the other two undergraduate colleges.

TEACHER PREPARATION

- A five-year program leading to a bachelor’s degree from the College of Arts and Sciences and a master’s degree in Education from the College of Education

MAJOR DEGREE PROGRAMS IN THE COLLEGE

Bachelor of Arts and Bachelor of Science Degree Programs

Two distinct bachelor-degree programs are offered by the College, each distinguished mainly by the proportion of courses taken in the major field. For the Bachelor of Arts degree the student takes a comparatively smaller number of courses to fulfill the major requirements plus a selection of courses in various fields outside the major. For the more professionally oriented Bachelor of Science degree, offered by the College in designated disciplines, the student takes a more extensive concentration in the major field, along with a proportionally smaller number of courses outside the major. Except for this distinction, the same basic requirements must be met for both degree programs (including the minimum number of 120 hours for graduation and the minimum average in the major of 2.0). No more than six hours of military science may be applied toward either degree.

Bachelor of Arts Degree

Humanities

Architectural history, architecture, art, art history, Asian studies, classical civilization, classics, design arts, English, modern languages and literature (French, German and Spanish), music, music composition, philosophy, religion studies, theatre

Social Sciences

African studies, anthropology, cognitive science, economics, environmental studies, global studies, history, international relations, IR/MLL joint major, journalism, journalism/science writing, political science, psychology, STS (science, technology and society), sociology/social psychology, sociology and anthropology, urban studies, women, gender and sexuality studies

Mathematics and Natural Science

Astronomy, behavioral neuroscience, biology, chemistry, computer science, earth and environmental science, mathematics, molecular biology, physics

BA degrees in premedical science, premedical science, or preoptometry science are available to students who are admitted to certain combined degree programs (see Health Professions Programs).

Bachelor of Science Degree

Astrophysics, behavioral neuroscience, biochemistry, biology, chemistry, computer science, earth and environmental science, mathematics, molecular biology, pharmaceutical chemistry, physics, psychology, statistics

GENERAL PLAN OF UNDERGRADUATE STUDY

Students in the College are required to choose - usually by the end of the sophomore year - a major field and to complete a program of courses, selected in consultation with the student’s adviser, to provide the breadth that is the mark of a liberal education. For most students, the credits earned for the major and those earned for the distribution requirements are not enough to meet the graduation requirement of 120, and students take free elective courses in areas of interest to earn the remaining credits. Three schemes of courses - one in the student’s area of concentration (the major-field requirements), a second set drawn from certain designated disciplines (the distribution requirements representing the minimum set), and a third set without constraints (the free electives) - make up the educational program in the College.

Major Field of Concentration

By majoring in a specific discipline, a student establishes a foundation of knowledge in that field, learns to frame its particular kind of questions, and starts to apply its traditional body of knowledge. By submitting to increasingly challenging and complex exercises in a distinct discipline over several semesters under the guidance of mature practitioners, the student can start to feel the rewards of intellectual mastery of a subject. The student thus experiences the gratification of developing expertise and intellectual sophistication.

Along with introductory courses in the discipline, the minimum number of credits for the major is 30. The student must maintain a minimum grade-point average of 2.0 in the major field.

Standard major sequences

When a student chooses one of the standard majors, a faculty member from the department or program offering the major becomes the student’s major adviser and assists the student in constructing a program of study. In all cases, the final responsibility for meeting both major and non-major requirements rests with the student.

Special interdisciplinary majors

In addition to the standard major programs, specially structured interdisciplinary major sequences between majors are possible. For example, a student interested in a professional school of urban or regional planning might wish to structure a special major consisting primarily of courses in political science and economics or in economics and social relations.

Any student may, with the aid of faculty members chosen from the disciplines involved, devise an interdisciplinary major program to include not less than thirty credits of related course work, of which at least 15 credits must consist of advanced courses. The major advisers and the dean of the college must approve the program.

Multiple majors and Double degrees

A student who wishes to fulfill the requirements for more than one major program has two options. A double major is a single BA degree with two majors (some students complete triple majors). A student pursues a double major by declaring both majors. Typically, double majors can be completed in four years, but sequencing of courses and time conflicts with required courses can introduce delays. No
more than three courses may overlap two majors. A double degree program is a combined BA and BS program or two Bachelor of Science degrees in one or more of our undergraduate colleges. The BA is in the College of Arts and Sciences, and the BS may be in any one of the three undergraduate colleges. A student pursues a double degree by declaring the first program and then petitioning the standing of students committee for permission to pursue the second degree program. A special balance sheet and a major declaration for the second degree must accompany the petition to pursue a second degree. The double-degree student must satisfy major and distribution requirements for both degrees and earn a minimum of 30 additional credits beyond those required for the first degree. All of the 30 additional credits must be taken at Lehigh or in Lehigh residency programs. The requirement of 30 additional credits typically makes the double degree program a five-year program. There is no limit on the number of overlapping courses between two degrees, but there must be at least 30 credits of non-overlapping coursework in each degree program. For administrative purposes, students who take two degrees or two majors must designate one as the primary major or primary degree.

Distribution Requirements
Whatever expertise in a single discipline an undergraduate may achieve, in the course of a lifetime, curiosity lures most of us beyond the confines of a single chosen specialty. Furthermore, in a swiftly changing world, careers are being rapidly redefined, and only a person of broad intellectual orientation can intelligently consider where one may be most useful to our society and find most personal gratification. Many of the basic modes of thought and work in various fields are being reformulated, often producing surprising influences in the public and private spheres. In this world-to devise for oneself a satisfying professional life and to be a responsible citizen-one needs some awareness of the concepts and methods specific not to one field only but to a variety of disciplines.

The distribution requirements are the four domains of learning in which the College faculty requires students to develop an introductory level of expertise through encountering the body of knowledge that each discipline has gathered, the kinds of phenomena it describes and manipulates, and the types of problems it addresses. Specified numbers of credits are required in each of the four domains: the mathematical sciences, the natural sciences, the social sciences, and the arts and humanities.

Distribution Requirements for the B.A. and the B.S.
College Seminar/First-Year Class
One course during the first year
English Composition 1
Two courses during the first year
Mathematical Sciences 1
Chosen from mathematics or designated courses from philosophy or computer science 3
Natural Sciences 1
Chosen from those designated in: astronomy, biological anthropology, biosciences, chemistry, earth and environmental sciences, physics, and neuroscience. At least one science course must also include the associated laboratory. 8
Social Sciences 1
Chosen from those designated in: anthropology, classics, economics, political science, history, international relations, journalism, psychology, social psychology, social relations, sociology, STS, and urban studies. 8
Arts and Humanities 1
Chosen from those designated in: architecture, art, classics, history, modern languages and literature. English, music, philosophy, religion studies, and theatre. 8

Total Credits 34-37

\[1\] Students and advisers should monitor closely the progress toward completion of requirements. Courses taken to satisfy a major program may be used to satisfy distribution requirements in only one distribution area.

Total required for graduation: 120 credits
A student’s program, including the choice of distribution requirements, is not official until approved by the adviser.

ECKARDT SCHOLARS PROGRAM
The Eckardt Scholars Program is a highly selective and unique honors program in the College of Arts and Sciences. The program emphasizes deep intellectual curiosity, independent work, and close mentoring relationships between the very highest achieving students and faculty at Lehigh. Each graduating class at Lehigh includes approximately twenty Eckardt Scholars per year. These students receive unique academic privileges, which propel them to great opportunities at Lehigh and beyond. Students in the program are exempt from the Arts & Sciences distribution requirements and work with their major advisor and the Eckardt Scholars Program Director to create a flexible course of study that best suits their academic interests and ambitions. Although exempt from Arts and Sciences distribution requirements, students will complete the requisite number of credits for their degrees and all correlative requirements for their departmental or interdisciplinary majors. The program includes participation in two Eckardt Scholar Seminars, and completion of a large independent project (in the form of a thesis, artistic creation, or other capstone experience) during the senior year.

Participation in the Eckardt Scholars Program is restricted to only the most especially well-qualified students, some of whom are invited to enroll at the time of admission to the university, and the rest whom are identified and encouraged to apply by faculty members during their first few semesters at Lehigh. Applicants to the program are evaluated for admission to the program on the basis of their academic records, written statements of educational goals, and recommendations from at least two faculty members.

In addition to the academic privileges of the program, Eckardt Scholars are offered an array of special opportunities during their time at Lehigh. They are provided with close advising and mentoring, invitations to special events and to meeting visiting speakers, special opportunities for funding research projects, close mentoring for accomplishing academic and career goals, etc.

JUNIOR-YEAR WRITING CERTIFICATION
The faculty of the College of Arts and Sciences holds that writing is an essential tool for learning and that writing well is indispensable for performing responsibly in a profession and in one’s life as a citizen. Beyond the two writing courses required in the first year, students in the College are encouraged to take courses that provide continued practice in writing throughout their years at Lehigh. In particular, each student in the College must complete at least one “writing-intensive” course normally during the junior year and receive writing certification from the instructor. Some major programs require that the writing-intensive course must be taken in the major field; others, that it be taken in a specific department outside the major; still others, that it may be chosen freely from writing-intensive courses offered by any department in the College. Courses that satisfy the writing-intensive requirement may also be used to fulfill major or distribution requirements.

FOREIGN LANGUAGE STUDY
Students planning to pursue graduate study toward a doctorate are reminded that most graduate schools require doctoral candidates to demonstrate a reading knowledge of one or two foreign languages. Proficiency in foreign languages is advantageous for careers in law, government, journalism, commerce, industry and other fields.

INTERNSHIPS
Many departments and programs offer optional internship courses, and some require an internship as part of a major program. Students should consult with the department offering the internship course for information about how the internships are arranged. The University faculty has established three important criteria that must be met by all internships: 80 hours of work are required for each credit awarded, no credit can be awarded for an internship ex post facto,
and the student must register for the internship course during the same term that the internship work is actually conducted. Students should be sure to pre-arrange all internship experiences with the appropriate department. Internship credits cannot be awarded for work experiences without a distinct educational component. A memorandum of understanding circulated among the employer, student, and departmental internship course director helps to promote a common understanding of the educational and work objectives of the internship. Students are advised that not all work experiences advertised as “internships” warrant academic credit, even though they may be otherwise worthwhile.

MINOR PROGRAMS IN THE COLLEGE

Certain departments, divisions, and programs in the College of Arts and Sciences afford an opportunity to minor in an additional field of concentration other than the major field.

A minor consists of at least 15 credits; the specific content is determined by the department, division, or program concerned. A minor is optional and, if successfully completed, will be shown on the university transcript in the same manner as the major field. A 2.0 minimum grade-point average is required for courses in the minor. Because of this requirement, no course in the minor program may be taken with Pass/Fail grading. No more than one course may be double-counted toward a major and a minor, and no more than one course may overlap between two minors.

It is the responsibility of students desiring a minor to initiate it no later than the beginning of the junior year by filing a minor program with the department, division, or program where it is offered. The student’s minor adviser maintains appropriate records.

Minors in the College of Arts and Sciences departments and programs are available for degree candidates in other colleges within the university, with approval of their college adviser.

The following are established minors in the College of Arts and Sciences. Some minor-program descriptions are collected within departmental descriptions, or located elsewhere, as indicated by parentheses. Students in the College of Arts and Sciences may also complete a minor in Business through the Business College or an Engineering minor through the College of Engineering.

- Actuarial Science (Mathematics)
- African Studies
- Anthropology (Sociology and Anthropology)
- Art (Art, Architecture and Design)
- Art/Architecture History (Art, Architecture and Design)
- Asian Studies
- Astronomy
- Biology (Biological Sciences)
- British Literature (English)
- Business
- Chemistry
- Chinese (Modern Languages and Literature)
- Classical Civilization (Classical Studies)
- Classics (Classical Studies)
- Cognitive Science
- Communication (Journalism and Communication)
- Computer Science
- Design
- Earth and Environmental Sciences
- Economics
- Education (Education Minor, this section)
- Engineering
- English
- Environmental Studies
- French (Modern Languages and Literature)
- German (Modern Languages and Literature)
- Global Studies
- Graphic Communication (Art and Architecture)
- Health, Medicine and Society
- History
- International Environmental Policy
- International Relations
- Japanese
- Jewish Studies
- Journalism (Journalism and Communication)
- Latin (Classical Studies) (minor offered through Classics program)
- Latin American Studies
- Mathematics, Applied (Mathematics)
- Mathematics, Pure (Mathematics)
- Military Science
- Molecular Biology (Biological Sciences)
- Museum Studies (Art and Architecture)
- Music
- Music Industry
- Philosophy
- Physics
- Political Science
- Probability and Statistics (Mathematics)
- Psychology
- Public Administration (Political Science)
- Public Relations (Journalism and Communication)
- Religion Studies
- Russian (Modern Languages and Literature)
- Science, Technology and Society
- Science Writing (Journalism and Communication)
- Social Relations (Sociology and Anthropology)
- Sociology (Sociology and Anthropology)
- Social Psychology (Sociology and Anthropology)
- Spanish (Modern Languages and Literature)
- Studio Art (Art and Architecture)
- Sustainable Development
- Theatre
- Women, Gender, and Sexuality Studies
- Writing (English)

COLLEGE SEMINAR/FIRST-YEAR CLASS (FYC) PROGRAM

During the first year, every student in the College of Arts and Sciences is required to enroll in a College Seminar or First-Year Class (FYC) taught by a member of the faculty. With small class size, these college seminars and special classes provide an intimate and supportive environment that facilitates the transition to university life. Students begin to develop many of the skills that serve as a framework for their future scholarly work-how to read closely, think critically, write clearly, learn cooperatively, speak persuasively, and solve problems creatively.

Courses in this program are an excellent way to explore a subject that may be new, or to enter more deeply into an area of previous interest. Many of the topics are non-traditional or interdisciplinary subjects of special interest to the professor. Whatever the topic, FYCs involve considerable effort on the part of students. Some classes emphasize reading assignments, papers, and oral presentations; others include tests, laboratory work, or fieldwork.

PRE-LAW PROGRAMS

Lehigh has a strong pre-law tradition. In keeping with the policy of the Association of American Law Schools, the university does not have a prescribed pre-law curriculum. Successful candidates for law school demonstrate skills in critical analysis, logical reasoning, and communication and have pursued rigorous coursework of significant breadth and depth. Lehigh students have attained entrance to law schools from diverse curricula in all three of the undergraduate colleges. Specifically law-related courses are offered in the College of Arts and Sciences.
of Arts and Sciences (e.g. Constitutional Law, Civil Rights and Civil Liberties, Law and Order) and the College of Business and Economics (e.g., Introduction to Law and Legal Environment of Business).

In addition to formal academic instruction, Lehigh provides other opportunities for learning about the law and legal careers. The annual Tresolini Lecture series brings nationally recognized speakers to campus for extended interactions with faculty and students. Tresolini lecturers have included present and past U.S. and state Supreme Court justices and renowned legal scholars and practitioners. Lehigh also provides opportunities for gaining academic credit in several off-campus programs that provide practical experience in law and public affairs.

Counseling is available to prospective pre-law students on a continuous basis from first-year orientation through the law school application process in the senior year. The pre-professional advisor in Career Services coordinates these pre-law counseling services.

HEALTH PROFESSIONAL PROGRAMS

Schools of medicine, dentistry, optometry, podiatry, and veterinary medicine stress the importance of a strong liberal arts education as well as prescribed studies in the sciences. Although most pre-health students will choose a major in a pure or applied science, as long as candidates have the essential courses in biology, chemistry, physics, and mathematics, they may major in any of the three undergraduate colleges.

A health professions advisory committee, which includes the pre-professional advisor and faculty members from the sciences, provides career and academic counseling and works closely with students from first-year orientation through the entire process of applying to professional schools. Students are urged to consult with the pre-professional advisor in Career Services as early as possible in their academic career. Those students interested in other allied health fields may also consult with the pre-professional advisor to obtain pertinent information to aid them in planning their college careers.

Combined-Degree Program in Medicine

In cooperation with Drexel University College of Medicine, Lehigh offers an accelerated program that enables selected students to earn both the baccalaureate degree (B.A.) with a major in premedical science and the M.D. degree after seven total years of study at the two institutions. In the first three academic years at Lehigh, credit hours are earned toward the 120 credits required for the baccalaureate degree. The next four years are spent in the regular program of medical education at Drexel University College of Medicine in Philadelphia. By successfully completing their first year at the medical school, students acquire the necessary additional credit hours for the Lehigh baccalaureate degree.

During their pre-professional years at Lehigh, students are expected to make satisfactory progress in academic areas as well as in the more subtle task of personal growth in those attributes ultimately needed as a physician. Drexel University College of Medicine receives student grades and monitors student progress through feedback from first-year orientation through the entire process of applying to professional schools. Students are urged to consult with the pre-professional advisor in Career Services as early as possible in their academic career. Those students interested in other allied health fields may also consult with the pre-professional advisor to obtain pertinent information to aid them in planning their college careers.

Required Science and Math Courses

Chemistry

Select one of the following: 8

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHM 030 &amp; CHM 031</td>
<td>Introduction to Chemical Principles and Chemical Equilibria in Aqueous Systems</td>
<td>4</td>
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<tr>
<td>CHM 040 &amp; CHM 041</td>
<td>Concepts, Models and Experiments I and Concepts, Models and Experiments II</td>
<td>4</td>
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Math

Select one of the following: 7-8

<table>
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>MATH 021 &amp; MATH 022</td>
<td>Calculus I and Calculus II</td>
<td>5</td>
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<tr>
<td>MATH 051 &amp; MATH 052</td>
<td>Survey of Calculus I and Survey of Calculus II</td>
<td>3</td>
</tr>
</tbody>
</table>

Total Credits 47-49

Required Non-Science Courses

First-Year Seminar 1-4

English Comp & Lit (I and II) 6

Humanities (three courses) 9-12

Social Sciences (three courses) 9-12

Writing Intensive 4

Approved Electives 12-16

Combined-Degree Program in Dentistry

In cooperation with the School of Dental Medicine at the University of Pennsylvania, Lehigh offers an accelerated program that enables selected students to earn both the baccalaureate degree (B.A.) with a major in preclinical science and the doctor of dental medicine degree (D.M.D.) after seven years of study at the two institutions. In the first three academic years at Lehigh, credit hours are earned toward the 120 credits required for the baccalaureate degree. The next four years are spent in the regular program of dental education at the Penn School of Dental Medicine in Philadelphia. By successfully completing their first year at the dental school, students acquire the necessary additional credit hours for the Lehigh baccalaureate degree.

During their first three years at Lehigh, students are expected to make satisfactory progress in prescribed academic areas as well as in the area of personal growth, developing those attributes ultimately needed to become a dentist. Penn Dental School receives student grades and monitors student progress through feedback from Lehigh. Students are expected to attain specified grade point averages and DAT scores. Students' undergraduate credentials are processed through the Admissions Committee of Penn Dental School before a final
definitive acceptance is offered. The dental college reserves the right to withdraw an acceptance, or require that a student spend additional time on the undergraduate level, on the grounds of academic or personal maturation concerns.

Application for admission to this program is made through Lehigh’s Office of Admissions. Application deadline is January 1.

**Required Science and Math Courses**

**Chemistry**

Select one of the following:

- CHM 030 & CHM 031 Introduction to Chemical Principles and Chemical Equilibria in Aqueous Systems
- CHM 040 & CHM 041 Concepts, Models and Experiments I and Concepts, Models and Experiments II
- CHM 110 & CHM 111 Organic Chemistry I and Organic Chemistry Laboratory I
- CHM 112 & CHM 113 Organic Chemistry II and Organic Chemistry Laboratory II

**Biology**

- BIOS 041 & BIOS 042 Biology Core I: Cellular and Molecular and Biology Core I: Cellular and Molecular Lab
- BIOS 115 & BIOS 116 Biology Core II: Genetics and Biology Core II: Genetics Laboratory
- BIOS 121 & BIOS 122 Biology Core III: Integrative & Comparative Biology and Biology Core III: Integrative and Comparative Lab

Select two Approved Electives

**Physics**

Select one of the following:

- PHY 010 & PHY 012 General Physics I and Introductory Physics Laboratory I
- PHY 011 & PHY 012 Introductory Physics I and Introductory Physics Laboratory I

Select one of the following:

- PHY 013 & PHY 022 General Physics II and Introductory Physics Laboratory II
- PHY 021 & PHY 022 Introductory Physics II and Introductory Physics Laboratory II

**Math**

Select one of the following:

- MATH 021 & MATH 022 Calculus I and Calculus II
- MATH 051 & MATH 052 Survey of Calculus I and Survey of Calculus II

**Total Credits**

46-48

**Required Non-Science Courses**

- First-Year Seminar: 1-4
- English Comp & Lit (I and II): 6
- Humanities (three courses): 9-12
- Social Sciences (three courses): 9-12
- Junior Writing Intensive: 12-16

**COMBINED-DEGREE PROGRAM IN OPTOMETRY**

In cooperation with the State University of New York College of Optometry in New York City, Lehigh offers an accelerated program in which students may earn both the baccalaureate degree (B.A.) with a major in behavioral neuroscience and the doctor of optometry degree (O.D.) after seven years of study at the two institutions. In the first three academic years at Lehigh, credit hours are earned toward the 120 credits required for the baccalaureate degree. The next four years are spent in the regular program of optometry education at SUNY College of Optometry. By successfully completing their first year at the optometry college, students acquire the necessary additional credit hours for the Lehigh baccalaureate degree.

SUNY College of Optometry receives student grades and monitors student progress through feedback from Lehigh. Students are expected to attain specified grade point averages and OAT scores. Students’ undergraduate credentials are processed through the Admissions Committee of SUNY Optometry before a final definitive acceptance is offered. The optometry college reserves the right to withdraw an offer of acceptance on the grounds of academic or personal maturation concerns.

Students may apply to this program either during their initial application or during their enrollment at Lehigh. Application for incoming students is made through Lehigh’s Office of Admissions. Application deadline is January 1.

**Required Science and Math Courses**

**Chemistry**

Select one of the following:

- CHM 030 & CHM 031 Introduction to Chemical Principles and Chemical Equilibria in Aqueous Systems
- CHM 040 & CHM 041 Concepts, Models and Experiments I and Concepts, Models and Experiments II
- CHM 110 & CHM 111 Organic Chemistry I and Organic Chemistry Laboratory I
- CHM 112 & CHM 113 Organic Chemistry II and Organic Chemistry Laboratory II

**Biology**

- BIOS 041 & BIOS 042 Biology Core I: Cellular and Molecular and Biology Core I: Cellular and Molecular Lab
- BIOS 115 & BIOS 116 Biology Core II: Genetics and Biology Core II: Genetics Laboratory
- BIOS 121 & BIOS 122 Biology Core III: Integrative & Comparative Biology and Biology Core III: Integrative and Comparative Lab

Select one of the following:

- BIOS 041 & BIOS 042 Introduction to Chemical Principles and Chemical Equilibria in Aqueous Systems
- BIOS 115 & BIOS 116 Biology Core II: Genetics and Biology Core II: Genetics Laboratory
- BIOS 121 & BIOS 122 Biology Core III: Integrative & Comparative Biology and Biology Core III: Integrative and Comparative Lab
- BIOS 130 Biostatistics
- BIOS 177 Behavioral Neuroscience I
- BIOS 276 Central Nervous System and Behavior and Experimental Neuroscience Laboratory
- BIOS 382 Endocrinology of Behavior

**Physics**

Select one of the following:

- PHY 010 & PHY 012 General Physics I and Introductory Physics Laboratory I
- PHY 011 & PHY 012 Introductory Physics I and Introductory Physics Laboratory I
- PHY 013 & PHY 022 General Physics II and Introductory Physics Laboratory II
- PHY 021 & PHY 022 Introductory Physics II and Introductory Physics Laboratory II
- PHY 031 & PHY 032 General Physics II and Introductory Physics Laboratory II
PHY 021 & PHY 022  Introductory Physics II and Introductory Physics Laboratory II

**Math**
Select one of the following:  7-8

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**Total Credits**  59-61

**Required Non-Science Courses**

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<tr>
<td>First-Year Seminar</td>
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<tr>
<td>English Comp &amp; Lit (I and II)</td>
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<tr>
<td>PSYC 001</td>
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</tr>
<tr>
<td>Social Sciences (one course)</td>
<td>4</td>
</tr>
<tr>
<td>Humanities (two courses)</td>
<td>8</td>
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<tr>
<td>Writing Intensive</td>
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<tr>
<td>Approved Electives (two courses)</td>
<td>6-8</td>
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**EDUCATION MINOR**

The education minor helps undergraduates explore career options in school teaching or other professional careers with elementary, secondary, or special education students. The minor may accelerate entry into a teaching career because appropriate credits from undergraduate coursework may be applied to one of Lehigh's graduate-level Teacher Education Programs.

The minor offers a systematic background of professional education experiences, coordinating practicum activities with theory courses designed to provide a foundation for future educational studies. Its focus is exploratory.

The experiences of the minor are intended to enrich an individual's understanding of education as a central intellectual activity of our culture and to provide self-understanding of one's own potential as an educator.

An undergraduate may take these courses with the approval of the adviser and minimum GPA of 2.75. Completion of the minor does not assure admission to one of the Teacher Education Programs to become a certified elementary or secondary teacher.

Fifteen credit hours are required for the education minor.

Completion of the minor does not guarantee subsequent admission into any of the College of Education degree or certification programs.

For more information about our Education Minor, visit [http://coe.lehigh.edu/academics/disciplines/teachered](http://coe.lehigh.edu/academics/disciplines/teachered) or contact the Teaching, Learning, and Technology Program Director at TLTProgram@Lehigh.edu or 610-758-3230.

**FIVE-YEAR BACHELOR’S PLUS MASTER’S OF EDUCATION AND SECONDARY TEACHER CERTIFICATION**

The College of Education offers a five-year degree program that is designed to allow students to earn both a bachelor’s degree and a master’s degree in five years instead of the traditional six.

The combined degree program leads to (1) a B.A./B.S. degree in an academic discipline from the College of Arts and Sciences, the P.C. Rossin College of Engineering and Applied Sciences, or the College of Business and Economics, and (2) an M.Ed. degree in elementary education or an M.Ed. or M.A. degree in secondary education. In addition, students also earn eligibility for an Instructional I teaching certificate from the Pennsylvania Department of Education (PDE).

These PDE certification areas are:

- Biology 7-12
- Chemistry 7-12
- Earth and Space Science K-12
- English 7-12
- General Science 7-12
- Mathematics 7-12
- Physics 7-12
- PreK-4th grade
- Social Studies 7-12

Freshmen, sophomores and juniors with a minimum overall GPA of 2.75 may apply to the 5-year teacher education program. Those accepted typically begin education courses in the second semester of their sophomore year (junior year for those admitted later).

Criteria for admission to the program include:

- A demonstrable commitment to learning and intellectual growth
- An expressed interest in teaching as a career
- Previous experience in working with young people; this can be gained in the summers of freshman and sophomore years.

In the fall semester of their senior year, students must complete an application for admission to the graduate College of Education (elementary or secondary education) in order to continue in the program and complete the master's degree/Instructional Level I teacher certification eligibility portion of the program.

For more information about the 5-year Teacher Education Program, visit [http://coe.lehigh.edu/academics/disciplines/teachered](http://coe.lehigh.edu/academics/disciplines/teachered) or contact the Teaching, Learning, and Technology Program Director at TLTProgram@Lehigh.edu or 610-758-3230.