

## Graduate Study and Research

### HISTORY

Lehigh began awarding graduate degrees in 1882. The first recipient, T.H. Hardcastle, of the Class of 1880, wrote his thesis on Alexander Pope, entitled *The Rights of Man*, and read it aloud at commencement in June 1882.

The first Ph.D. was granted in 1893 to Joseph W. Richards, Class of 1886. Richards, who had a background in metallurgy and electrochemistry, taught at Lehigh until his death in 1921.

Women were admitted to the graduate program in 1918 when the faculty and the board of trustees agreed to grant the degrees of M.A. and M.S. to women, provided they attended classes in the late afternoon and on Saturdays "so that the general character of campus life shall not be affected." Three women received graduate degrees in 1921, the first women to complete graduate work at Lehigh. In 1929, the rule was changed, and women were admitted on much the same basis as men.

In 1936, the Graduate School was established to administer the graduate program. The Ph.D., which was temporarily discontinued in 1894, was reinstated in nine departments: chemistry, chemical engineering, civil engineering, geology, history, mathematics, mechanical engineering, metallurgical engineering, and physics. Tomlinson Fort, professor of mathematics, was selected in 1938 as the first dean of the Graduate School.

In 1995, graduate programs were decentralized and are now administered by the individual colleges of the university, as described below.

### CREDIT HOURS

Each course is designated a credit value of the course in terms of semester hours ("credit hours").

### COURSE NUMBERING

The course numbering system specifies which courses can be applied to the program of study as the student progresses toward the undergraduate or graduate degree. In general, the numbering series is as follows:

- **0-99.** Courses primarily for freshmen or sophomores. Not available for graduate credit.
- **100-199.** Intermediate-level undergraduate courses. Not open to freshmen except on petition. Not available for graduate credit.
- **200-299.** Advanced undergraduate courses. Courses in the College of Business and specific departments as noted in the listings are open to freshmen and sophomores only with permission. Not available for graduate credit in the major field.
- **300-399.** Advanced undergraduate courses. Same as 200-299, but available for graduate credit in major field.
- **400-499.** Graduate-level courses, open to undergraduates only by petition.

### COLLEGE OF ARTS AND SCIENCES

Robert A. Flowers, Herbert and Ann Siegel Dean

R. Michael Burger, Associate Dean for Research and Graduate Programs, Professor of Biological Science

The College of Arts and Sciences offers graduate degrees in the humanities, social sciences, mathematics, and natural sciences. The master of arts, master of science, and the doctor of philosophy degrees are given in most of the traditional academic departments and in some interdisciplinary programs. Advanced degrees may be obtained in the departments of biological sciences, chemistry, earth and environmental sciences, English, history, mathematics, physics, political science, psychology, statistics, and an interdisciplinary degree in Environmental policy.

Although degree requirements vary from department to department, most require a combination of formal coursework and independent research. Students work closely with a faculty adviser in formulating and carrying out their research programs. Students admitted to a traditional department who are interested in an interdisciplinary

approach may design a program of study and research which draws on faculty and facilities in other areas of the college or university.

Certificate programs (<http://catalog.lehigh.edu/courses/programsandcurricula/interdisciplinarygraduatestudyandresearch/graduatecertificates/>) are also available in many areas of study.

For the most up to date information, interested students should check the CAS graduate website (<https://cas.lehigh.edu/graduate/>) or contact the Office of Research and Graduate Programs, College of Arts and Sciences, 9 West Packer Ave., Bethlehem, PA. 18015, 610-758-4280 or email to [incasgrd@lehigh.edu](mailto:incasgrd@lehigh.edu).

### COLLEGE OF BUSINESS

**Manoj K. Malhotra, Dean**

**Xiaosong (David) Peng, Associate Dean**

The College of Business is accredited by AACSB International; the Association to Advance Collegiate Schools of Business.

There are six departments in the college: Accounting, DATA (Decision and Technology Analytics), Economics, Perella Department of Finance, Management, and Marketing.

Information on the college's graduate programs may be obtained by visiting the College of Business graduate website (<https://business.lehigh.edu/graduate/>).

### Specialty Master's Degrees

The College of Business offers STEM-designated specialty master's degrees in Applied Economics (<https://business.lehigh.edu/academics/graduate/masters-programs/ms-applied-economics/>), Business Analytics (<https://business.lehigh.edu/academics/graduate/masters-programs/ms-business-analytics/>), and Management (<https://business.lehigh.edu/academics/graduate/masters-programs/ms-management/>). A dual degree program (<https://business.lehigh.edu/academics/graduate/masters-programs/dual-degree/>) for these 3 programs is available and allows the completion of two degrees in two years. Lehigh undergraduate students may opt for a 4+1 program (<https://business.lehigh.edu/academics/graduate/masters-programs/ms-applied-economics/accelerated-program/>) that would allow the M.S. in Applied Economics degree to be completed in an accelerated mode.

The College of Business, the P.C. Rossin College of Engineering and Applied Science, and the College of Arts and Sciences offer a master of science degree in Financial Engineering (<https://business.lehigh.edu/academics/graduate/masters-programs/ms-financial-engineering/>), which provides a strong education in advanced finance and quantitative financial analysis tools. Students will be prepared to create innovative solutions for real financial problems using state-of-the-art analytical techniques and computing technology. Lehigh undergraduate students may opt for a 4+1 program (<https://business.lehigh.edu/academics/graduate/masters-programs/ms-financial-engineering/accelerated-program/>) that would allow the M.S. in Financial Engineering degree to be completed in an accelerated mode.

### Master's of Business Administration (MBA)

The master of business administration (MBA) allows full-time or part-time study. The one-year, full-time MBA program (<https://business.lehigh.edu/academics/graduate/masters-programs/one-year-mba/>) is available with concentrations in business analytics, financial management, marketing, and supply chain management. The part-time FLEX MBA program (<https://business.lehigh.edu/academics/graduate/masters-programs/flex-mba/>) offers courses on campus or **online** in a synchronous format and is available with concentrations in business analytics, corporate entrepreneurship, finance, marketing, international business, public health, project management, and supply chain management.

In addition, the College of Business and the P.C. Rossin College of Engineering and Applied Science offer an MBA and Engineering (<https://business.lehigh.edu/academics/graduate/masters-programs/flex-mba/mba-engineering/>) degree. Students in this program will

Stephen P. DeWeerth, dean

Derick Brown, associate dean for undergraduate education

Kristen Jellison, associate dean for faculty development

Mayuresh Kothare, associate dean for research

Mark Snyder, associate dean for graduate education

Susan Perry, assistant dean for academic affairs

The P.C. Rossin College of Engineering and Applied Science offers numerous opportunities for graduate study (<https://engineering.lehigh.edu/academics/graduate/programs/>), both at the master's as well as the doctoral level. Both research-focused, as well as course-only options exist. Degree programs span both disciplinary areas within the academic departments, as well as interdisciplinary areas (<https://catalog.lehigh.edu/coursesprogramsandcurricula/interdisciplinarygraduatestudyandresearch/>). Many programs can be taken part-time or through distance education. See this page for more details: <https://engineering.lehigh.edu/academics/graduate/programs/> (<https://engineering.lehigh.edu/academics/graduate/programs/>).

In cooperation with the College of Business, students can also pursue a Master of Business Administration and Engineering (MBA&E) degree.

Certificate programs (<https://catalog.lehigh.edu/coursesprogramsandcurricula/interdisciplinarygraduatestudyandresearch/graduatecertificatesengineering/>) are also available in multiple areas of study.

Graduate study in the P.C. Rossin College of Engineering and Applied Science is most often related to the college's extensive research and scholarship activity. Students pursuing research-based graduate degrees are expected to engage in analytical or experimental research as part of their programs of study. This activity involves students in the process of creating new knowledge under the direction of the college's distinguished faculty and brings them into contact with some of the most modern and advanced experimental techniques. Many college research programs are supported by contracts, fellowships, and grants from industry and from federal, state, and local governments. This funding not only provides financial support for outstanding students but also allows them to deal with some of the more complex and pressing problems facing our society in the 21st century.

Many faculty members and graduate students in the P.C. Rossin College of Engineering and Applied Science are associated with interdisciplinary research centers and institutes as well their own departments. The opportunity for interdisciplinary study allows them to cross departmental lines in specific technological areas and to work with faculty and graduate students from other departments. Information on current research activities can be found at URL <https://engineering.lehigh.edu/research> (<https://engineering.lehigh.edu/research/>), as well on on departmental pages.

Further information on the graduate programs may be obtained through the Office of Graduate Studies and Research, P.C. Rossin College of Engineering and Applied Science, 19 Memorial Drive West, Bethlehem, PA 18015, or at [engineering@lehigh.edu](mailto:engineering@lehigh.edu).