

Professional Science

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The College of Basic and Applied Sciences offers the Master of Science with a major in Professional Science (M.S.) with three concentrations: Biostatistics, Biotechnology, and Health Care Informatics. See departmental listings in this catalog for complete course descriptions.

Requirements for the Master of Science–Professional Science Major

Once accepted into the College of Graduate Studies, students interested in the Master of Science in Professional Science program may enroll for one semester before being fully admitted to the program.

Candidate must

1. complete a minimum of 36 semester hours of graduate credit. This includes 15 hours of the following core courses that are required for all three concentrations—Biostatistics, Biotechnology, and Health Care Informatics.

Core Courses

BCEN	6820	Managerial Communication, 3 hours
MGMT	6740	Leadership and Motivation, 3 hours
ACTG	6100	Accounting and Legal Issues for Managers, 3 hours
STAT	5140	Probabilistic and Statistical Reasoning, 3 hours
BCEN	6910	Internship Program, 3 hours

2. file a degree plan with the Graduate Office prior to the completion of 21 credit hours.

Application Process

All applicants to the Master of Science in Professional Science degree program must formally apply to the College of Graduate Studies as degree-seeking students. A complete application package consists of the graduate application, application fee, official transcripts from all collegiate institutions attended, three letters of reference, and an official Graduate Record Examination (GRE) report. A composite GRE score of 900 is expected for consideration for unconditional admission. Also, the applicant must have the appropriate undergraduate preparation for the area of concentration.

General Admission Requirements

General admission requirements include basic competency in word processing, electronic mail, library retrieval systems, presentation graphics, spreadsheets, and databases, and completion of a basic applied statistics course (STAT 5130 or the equivalent) with a grade of C (2.00) or better.

Concentration in Biostatistics

For admission to the Biostatistics concentration, candidates are expected to have completed a course in multivariate calculus with a grade of C (2.00) or better (MATH 3110 or the equivalent) and a course in linear algebra with a grade of C (2.00) or better (MATH 2010 or the equivalent).

In addition to the 15 hours of core courses, the Biostatistics concentration requires 21 hours from the following courses:

Required

STAT	6020	Introduction to Biostatistics, 3 hours
STAT	6160	Statistics, 3 hours
STAT	6180	Statistical Inference, 3 hours
STAT	6510	Biostatistical Methods, 3 hours
STAT	6520	Advanced Biostatistical Methods, 3 hours

Six hours from the following:

STAT	6602	Problems in Statistics, Regression Analysis, 1-4 hours
STAT	6603	Problems in Statistics, Nonparametric Statistics, 1-4 hours
STAT	6604	Problems in Statistics, Experimental Design, 1-4 hours

Concentration in Biotechnology

For admission to the Biotechnology concentration, candidates must possess an undergraduate degree with a major in biology or chemistry or another major and must have taken organic chemistry and at least three undergraduate courses related to biotechnology, including genetics.

In addition to the 15 hours of core courses, the Biotechnology concentration requires 21 hours from the following courses:

Required

BIOL	5550	Biotechnology, 3 hours
BIOL	6770	Issues in Biotechnology, 2 hours

16 hours to be selected from the following:

BIOL	5460/5461	Human Genetics/Lab, 3 hours
BIOL	5510	Food/Industrial Microbiology, 4 hours
BIOL	6350/6351	Biostatistical Analysis/Lab, 4 hours
BIOL	6380/6381	Experimental Immunology/Lab, 4 hours
BIOL	6390/6391	Advanced Cell and Molecular Biology/Lab, 4 hours
BIOL	6410	Advanced Transmitting Electron Microscopy, 4 hours
BIOL	6430	Clinical and Pathogenic Microbiology, 4 hours
BIOL	6440	Advanced Virology, 4 hours
BIOL	6450	Advancements in Molecular Genetics, 4 hours
BIOL	6500	Special Problems in Biology, 4 hours
BIOL	6590	Environmental Toxicology, 4 hours
BIOL	6650	Seminar, 1 hour
BIOL	6660	Seminar, 2 hours
BIOL	6720/6721	Advanced Animal Development/Lab, 4 hours
BIOL	6730	Advanced Microbial Physiology and Biochemistry, 4 hours
BIOL	6750	Advanced Plant Biotechnology, 4 hours
BIOL	6760	Bioinformatics, 4 hours
CHEM	6510	Biochemistry II, 3 hours
CHEM	6530	Biochemical Techniques, 2 hours

Concentration in Health Care Informatics

Candidates should possess an undergraduate degree with a major in health care or work experience in a health-related field. Applicants without a relevant degree or work experience may be admitted but may be required to complete appropriate prerequisite assignments.

In addition to the 15 hours of core courses, the Health Care Informatics concentration requires 21 hours from the following courses:

- NURS 6400 Introduction to the Clinical Health Care Environment, 2 hours
- NURS 6401 Informatics and Information Management, 3 hours
- NURS 6402 Health Care Information Systems, 3 hours
- NURS 6403 Analysis and Design of Health Care Information Systems, 3 hours
- NURS 6404 Evaluation of Health Care Information Systems, 3 hours
- NURS 6405 Health Care Data Analysis Techniques, 3 hours
- NURS 6407 Informatics Applications Practicum I, 2 hours
- NURS 6409 Informatics Applications Practicum I, 2 hours

