Accelerated Dual Degree BS in Biomedical Engineering/MSPS

The College of Engineering, and the College of Pharmacy & Health Sciences at Western New England University have collaborated to offer a program unique to western Massachusetts for those students interested in attaining a Bachelor's of Science in Engineering (BSE) - Biomedical Engineering (BSBME) and furthering their career aspirations with a thesis-based Masters of Science in Pharmaceutical Sciences (MSPS). This is a dual degree program, where students completing the requirements for each program will receive two separate degrees, with just one additional year of study beyond the normal 4-year Bachelors program.

Accordingly, students can earn both the BSBME and the MSPS degree within five years of entry as an undergraduate. Students admitted by WNE Admissions as undergraduates are only admitted into the BS degree portion of the program. Transition into the MSPS program is not automatic, nor is acceptance into the MSPS program guaranteed, but requires application and acceptance into the MSPS program. The MSPS program admission requirements can be found in the "Master of Science in Pharmaceutical Sciences" program in this catalogue.

Students in good standing in the BSBME program are eligible to apply for admission to the MSPS degree program during their sophomore year after January 1. Candidates must successfully submit their application materials, as well as complete an admissions interview, if requested of them.

Students choosing this unique curricular path will need to consult closely with their BSBME and MSPS advisors to plan their elective courses appropriately.

The courses PHAR 514 (Pharmaceutics I), PHAR 524 (Pharmaceutics II), PHRSC 515 (Principles of Pharmacology), PHRSC 527 (Data Analysis and Biostats), and PHAR 523 (Basic Principles of Genetics & Genomics) can fulfill BSE sequence elective requirements, but only if the student did not already take a similarly titled course as part of their BME degree program. If the student already took such a course, the graduate course credits cannot count towards the undergraduate degree.

The first two years of study will remain the same as the BSBME curriculum. Beginning in the third year, the student will take courses in both the Colleges of Engineering and Pharmacy & Health Sciences. At the end of the fourth year, the student will graduate with the BSBME degree and will exclusively take MSPS courses starting that summer.

MSPS degree completion requirements: All courses passed (with a grade of "C" or better), with no more than two courses with a grade of "C" or "C+"; and attainment of an overall grade point average of 3.0 or higher.

Students in the BSBME major that either (a) do not meet the MSPS program admission requirements during their sophomore year, or (b) elect not to apply for admission to the MSPS program at that time, remain eligible to apply for admission as part of the general applicant pool following four years of University study and completion of a bachelor's degree.

Degree Requirements

83 TOTAL CREDIT HOURS OVER THE THREE DUAL-DEGREE YEARS

3rd Year - Fall Semester

BME 301	Engineering Physiology I	3 cr.
BME 305	Biomedical Engineering Laboratory I	1 cr.
BME 331	Bioinstrumentation	3 cr.
PHRSC 529	Responsible Conduct of Research	3 cr.
PHRSC 582	cGXP and Regulatory Affairs	3 cr.
BME XXX	BME Elective	3 cr.

Subtotal: 16
MSPS: 6

3rd Year - Spring Semester

BME 302	Engineering Physiology II	3 cr.
BME 306	Biomedical Engineering Laboratory II	1 cr.
BME 351	Biomechanics I	3 cr.
GBD XXX	Golden Bear Discovery	3 cr.
GBD XXX	Golden Bear Discovery	3 cr.

PHAR or PHRSC XXX	MSPS Elective	2-4 cr	
IE 212	Probability and Statistics	3 cr.	

Subtotal: 18-20
MSPS: 2-4

4th Year - Fall Semester

BME 405	Biomedical Engineering Senior Laboratory	1 cr.	
BME 437	Senior Design Projects I	3 cr.	
BME 451	Biomechanics II	3 cr.	
PHRSC 510	Seminar and Journal club 1	1 cr.	
PHRSC 526	Analytical Techniques Lab	1 cr.	
PHRSC 527	Data Analysis and Biostatistics	3 cr.	
PHRSC XXX	MSPS Elective(s)	2-4 cr.	

Subtotal: 14-16
MSPS: 7-9

4th Year - Spring Semester

BME 440	Senior Design Projects II	3 cr.	
BME 450	Biotransport Processes	3 cr.	
GBD XXX	Golden Bear Discovery	3 cr.	
PHRSC 520	Seminar & Journal Club 2	1 cr.	
PHRSC 557	Mechanisms of Drug Action	3 cr.	
PHRSC 572	Advanced Therapeutic Medicinal Products	3 cr.	

Subtotal: 16
MSPS: 7

4th Year - Summer

PHRSC 528	Thesis Research 1	2 cr.	

Subtotal: 2

5th Year - Fall Semester

PHRSC 618	Thesis Research 2	3 cr.	
PHRSC 630	Scientific Communications	3 cr.	
PHAR or PHRSC XXX	MSPS Elective	3-4 cr.	

Subtotal: 9-10

5th Year - Spring Semester

PHRSC 628	Thesis Research 3	3 cr.	

Subtotal: 3

Subtotal: 83

Total Credit Hours over 3 dual degree years: 83

Total MSPS Credit Hours: 38