Pre-Professional Health Program at UMass Lowell
A Guide to Taking Pre-Requisite Courses

General Information

The guide was developed based on the pre-requisite requirements of professional programs at various schools, as well as what we have learned about content on standardized tests required for these programs (e.g. GRE, MCAT, DAT, OAT, PCAT, etc.).

This guide, along with degree pathways, should be used during meetings with students and their advisors (academic and pre-professional health) to develop a plan in which students complete pre-requisites for their desired professional health degree programs, as well as completing their degree requirements. At the back of this document, there is a worksheet that students can use to help them develop this plan. Students should confirm this plan with their advisors so not to impact graduation and/or completion of professional school pre-requisites.

While pre-requisites for medical schools are pretty much standard across schools, pre-requisites for programs like Physician Assistant (PA) Studies are not. Our lists below aim to cover pre-requisites for a large number of schools so that students are eligible to apply to more schools.

Medical School Requirements

- One year of General Chemistry with lab (e.g. CHEM.1210 with 1230L; and 1220 with 1240L)
- One year of Organic Chemistry with lab (e.g. CHEM.2210 with 2290L; and 2230 with 2300L)
- One year of General Biology/Zoology with lab (e.g. BIOL.1110 with 1170L; and 1120 with 1180L)
- One year of Physics with lab (e.g. PHYS.1030 with 1030L; and 1040 with 1040L)
- One year of College English (ENGL.1010 and 1020)
- One year of Calculus (e.g. MATH.1310 or 1380; and 1320 or 1390)
- One year of Social Science: Psychology, Sociology and or Anthropology
- Biochemistry (BIOL.4190)
  - Non-Biology majors take with Experimental Methods in Biology BIOL.2330L
  - Biology majors take with Biochemistry Techniques BIOL.4210L
  - Zuckerberg College of Health Sciences majors can take Human Biochemistry HSCI.3500 if it is required for their major (i.e. Public Health majors). Otherwise, they can take BIOL.4190. However, students should take Experimental Methods in Biology BIOL.2330L as well.
- Introduction to Statistics (MATH.2830)
Dental School Requirements

• Required
  – One year of General Chemistry with lab (e.g. CHEM.1210 with 1230L; and 1220 with 1240L)
  – One year of Organic Chemistry with lab (e.g. CHEM.2210 with 2290L; and 2230 with 2300L)
  – One year of General Biology/Zoology with lab (e.g. BIOL.1110 with 1170L; and 1120 with 1180L)
  – One year of Physics with lab (e.g. PHYS.1030 with 1030L; and 1040 with 1040L)
  – One year of College English (ENGL.1010 and 1020)
  – One year of Calculus (e.g. MATH.1310 or 1380; and 1320 or 1390)
  – One year of Social Science: Psychology, Sociology and or Anthropology
  – Biochemistry (BIOL.4190) (See applicable note under pre-med regarding this course.)
  – One year of calculus-based math (e.g. MATH.1310 or 1380; and 1320 or 1390)
  – Introduction to Statistics (MATH.2830)

• Recommended (each 1 semester)
  – Microbiology (required by some schools) (BIOL.3010)
  – Cell Biology (BIOL.2200)
  – Anatomy & Physiology (HSCI.1010 with HSCI.1030; II HSCI.1020 with HSCI.1040)
    • Non-Zuckerberg College of Health Sciences students: please contact pre-professional health advisor for assistance with getting signed up for these courses.
  – Histology
  – Immunology (BIOL.4930 and BIOL.4950L)
  – Molecular Biology (BIOL.2200)

Veterinary School Requirements

• Required
  – One year of General Chemistry with lab (e.g. CHEM.1210 with 1230L; and 1220 with 1240L)
  – One year of Organic Chemistry with lab (e.g. CHEM.2210 with 2290L; and 2230 with 2300L)
  – One year of General Biology/Zoology with lab (e.g. BIOL.1110 with 1170L; and 1120 with 1180L)
  – One year of Physics with lab (e.g. PHYS.1030 with 1030L; and 1040 with 1040L)
  – One year of College English (ENGL.1010 and 1020)
  – One year of Calculus (e.g. MATH.1310 or 1380; and 1320 or 1390)
  – One year of Social Science: Psychology, Sociology and or Anthropology
  – Introduction to Statistics (MATH.2830)
  – Biochemistry (BIOL.4190) (See applicable note under pre-med regarding this course.)

• Recommended (although now Required for many schools)
  – Genetics (BIOL.2350)
  – Microbiology (BIOL.3010)
  – Humanities/Social Sciences Courses (already part of undergraduate graduation requirements)
Physician Assistant Studies Requirements

Students are strongly encouraged to check pre-requisites for schools to which they plan to apply. Requirements for PA schools can vary. However, students should take courses that cover pre-requisites for all the schools they are applying to. Here is an example of such a difference: MCPHS and BU require Organic Chemistry I while Tufts, Northeastern and MGH Institute only require two semesters of Chemistry. In that scenario, we strongly advise students to take Organic Chemistry in addition to Chemistry I and II, so they are covering pre-requisites for all schools. Not taking Organic Chemistry means not fulfilling pre-requisites to apply to MCPHS and BU.

• **Required**
  - Human Anatomy and Physiology (Anatomy & Physiology I HSCI.1010 with HSCI.1030 and Anatomy & Physiology II HSCI.1020 with HSCI.1040)
    • Non-Zuckerberg College of Health Sciences students: please contact pre-professional health advisor for assistance with getting signed up for these courses.
  - Microbiology (1 semester) (BIOL.3010)
  - One year of General Biology with lab (BIOL.1110 with 1170L; and 1120 with 1180L)
  - One year of General Chemistry with lab (e.g. CHEM.1210 with 1230L; and 1220 with 1240L)

• **Recommended**
  - Biochemistry (BIOL.4190)
    • (Zuckerberg College of Health Sciences majors can take Human Biochemistry HSCI.3500 as long as it meets the requirements for schools they are applying to. Students are responsible for checking this information.)
  - Organic Chemistry I (CHEM.2210 with 2290L)
    • To ensure students are able to apply to a wide range of schools, we strongly recommend taking this course.
  - Introduction to Statistics (MATH.2830)

Optometry School Requirements

- One year of General Chemistry with lab (e.g. CHEM.1210 with 1230L; and 1220 with 1240L)
- One year of Organic Chemistry with lab (e.g. CHEM.2210 with 2290L; and 2230 with 2300L)
- One year of General Biology/Zoology with lab (e.g. BIOL.1110 with 1170L; and 1120 with 1180L)
- One year of Physics with lab (e.g. PHYS.1030 with 1030L; and 1040 with 1040L)
- One year of College English (ENGL.1010 and 1020)
- One year of Calculus (e.g. MATH.1310 or 1380; and 1320 or 1390)
- Biochemistry (BIOL.4190) (See applicable note under pre-med regarding this course.)
- Introduction to Statistics (MATH.2830)
- Human Anatomy and Physiology (HSCI.1010 with HSCI.1030; and HSCI.1020 with HSCI.1040)
  • Non-Zuckerberg College of Health Sciences students: please contact pre-professional health advisor for assistance with getting signed up for these courses.
- Microbiology (1 semester) (BIOL.3010)
- Psychology (1 semester – General Psychology or other)
Schools of Pharmacy Requirements

- One year of General Chemistry with lab (e.g. CHEM.1210 with 1230L; and 1220 with 1240L)
- One year of General Biology with lab (e.g. BIOL.1110 with 1170L; and 1120 with 1180L)
- One year of Calculus (e.g. MATH.1310 or 1380; and 1320 or 1390)
- One year of Organic Chemistry with lab (e.g. CHEM.2210 with 2290L; and 2230 with 2300L)
- One year of Physics with lab (e.g. PHYS.1030 with 1030L; and 1040 with 1040L)
- Introduction to Statistics (MATH.2830)
- Human Anatomy & Physiology (HSCI.1010 with HSCI.1030; and HSCI.1020 with HSCI.1040)
  - Non-Zuckerberg College of Health Sciences students: please contact pre-professional health advisor for assistance with getting signed up for these courses.
### Worksheet

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