### PRE-MEDICINE

#### Introduction

Students interested in a career in allopathic (MD) or osteopathic (DO) medicine have the option of completing a four-year degree in any major along with completing specific prerequisites. Medical school admission is very competitive and students should work closely with the Pre-Med Advisor throughout their college years to stay on track with both academic and co-curricular preparation. Students should gain clinical experience through hospital volunteerism and shadowing physicians. Academic admission requirements vary somewhat by medical school. The Medical College Admission Test (MCAT) includes some content from courses not specifically required by all medical schools. Students must complete coursework that both satisfies medical school requirements and also prepares them to score well on the MCAT. Students applying to medical schools receive a letter of evaluation from the Health Science Advisory and Recommendation Committee. In addition to the information in this section, please check the general information at the pre-medical and pre-health section of the catalog (http://catalog.canisius.edu/undergraduate/academics/curricular-information/pre-professional-programs/pre-medical-pre-health-professions/).

#### Joint and Early Assurance Programs

Canisius College students may apply to Early Assurance programs (4+4) at the State University of New York Upstate Medical University (Syracuse, NY) College of Medicine and the Lake Erie College of Osteopathic Medicine (PA and FL campuses). Students apply to the Upstate program during the sophomore year. Students may apply to the LECOM program at the same time they apply to Canisius while in high school or during the freshman or sophomore year at Canisius. Highly qualified students may also apply to the LECOM joint seven-year (3+4) program in high school or the freshman year of college. A six-year (3+3) primary care physician pathway is also available through LECOM. Students in the LECOM programs with the appropriate academic indices are not required to take the MCAT. An Early Opportunity in Medicine Program (http://medicine.buffalo.edu/olace/education/education/early-opportunity-medicine.html) for qualified applicants from groups historically underrepresented in medicine is offered in conjunction with the SUNY University at Buffalo Jacobs School of Medicine and Biomedical Sciences. Students apply to the EOPIM during the sophomore year.

#### Recommended Pre-Medical Courses

Recommendations include those courses needed to meet most medical school requirements and to prepare for the MCAT. Students must consult individual medical schools for additional specific requirements. The PreMed Center has resources to help students in this process.

#### English

One year of English composition (ENG 111 & ENG 112, or students who entered Canisius prior to fall 2018 may use FYS 101 and ENG 101) or the Honors Program equivalent (HON 101 and an Honors Literature course).

#### Biology

At least one year of general biology with laboratory: (Please note that some schools require an additional course in biology. Students work with the PreMed Advisor to plan for these additional courses.)

#### Chemistry

One year of general chemistry and one year of organic chemistry with laboratories:

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<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHM 111 &amp; 111L</td>
<td>General Chemistry I and General Chemistry I Laboratory</td>
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<tr>
<td>CHM 112 &amp; 112L</td>
<td>General Chemistry II and General Chemistry II Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>CHM 227 &amp; 227L</td>
<td>Organic Chemistry I and Organic Chemistry I Laboratory</td>
<td>4</td>
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<tr>
<td>CHM 228 &amp; 228L</td>
<td>Organic Chemistry II and Organic Chemistry II Laboratory</td>
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1 Students may take CHM 109, CHM 110, and CHM 111L to fulfill this requirement.

#### Biochemistry

Students may take biochemistry in either the Biology Department (BIO 211-BIO 212) or the Chemistry Department (BCH 301-BCH 302).

#### Physics

One year of introductory physics with laboratory:

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<tr>
<td>PHY 201 &amp; 201L</td>
<td>College Physics I and College Physics I Laboratory</td>
<td>8</td>
</tr>
<tr>
<td>PHY 202 &amp; 202L</td>
<td>College Physics II and College Physics II Laboratory</td>
<td>8</td>
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#### Mathematics

Math requirements vary at different medical schools. Most medical schools require one year of college level math. Some specifically require calculus, some specifically require statistics. The MCAT utilizes statistics typically learned through science courses. We recommend students take a minimum of one semester of statistics (MAT 141 or PSY 201) and strongly encourage students to also take one semester of calculus (MAT 111 or MAT 109/MAT 110). Chemistry majors must take MAT 141.

#### Behavioral/Social Science

One semester each of psychology (PSY 101 or PSY 102) and sociology (SOC 110). Some medical schools require more than two courses in the behavior/social sciences. The MCAT includes content from PSY 101, PSY 102
and SOC 110. If a student does not take both PSY 101 and PSY 102, they may learn some psychology content independently.

**Elective Courses**

Students not majoring in a science are encouraged to take additional science elective courses. Additionally, several specialized courses of interest are available to help students explore aspects of medicine and healthcare in more depth.

HRP 101 allows students to explore different health professions.

HRP 201 and HRP 202 allow students to explore areas of medicine in more depth.

HRP 498 is an internship in medical informatics.