PHY 476  Stellar Astrophysics  3-3-0
An introduction to the properties of stellar atmospheres and interiors. The equations of stellar evolution, nuclear energy generation, radiative transport and stellar model building will be studied. Further topics include the formation of stars, and the physics associated with supernovae, white dwarfs, neutron stars, pulsars and black holes.

PHY 480  Honours Research Dissertation  6-1-6
Each student is required to carry out either an experimental or theoretical project under the supervision of a faculty member. A plan outlining the proposed research must be submitted for approval during the first four weeks of the course. Each student will present his/her results in the form of a seminar, an oral thesis defense, and a written dissertation.

Pre-Medicine Double Major (B.Sc)

Faculty
Administered by the Chair of Biology

Program Overview
(75 credits)

The Pre-Medicine double major allows students to complete the necessary pre-requisites to apply to medical schools while at the same time pursuing a liberal arts education. The required and optional courses listed below correspond to the entrance requirements of many Canadian and American medical schools, as well as address the requirements of most related professional schools (such as dentistry or physiotherapy).

Quebec students with a completed D.E.C. will be granted credit for Y1 Year courses (30 credits) if they successfully completed collegial courses in Chemistry (General Chemistry, Solutions Chemistry), Physics (Mechanics, Electricity and Magnetism), Mathematics (Differential Calculus, Integral Calculus) and Biology (General Biology, Cell and Molecular Biology). Students lacking any of these courses can take their equivalents at Bishop’s, and their advanced credits will be reduced accordingly.

Program Requirements

1. B.Sc. Y1 Year (27 credits; non-Quebec students)
   BIO 196  Introductory Biology I: Introduction to Cellular and Molecular Biology
   CHM 191  General Chemistry I
   CHM 192  General Chemistry II
   PHY 193  Physics for the Life Sciences I
   PHY 194  Physics for the Life Sciences II
   MAT 198  Calculus I for Life Sciences
   MAT 199  Calculus II for Life Sciences
   ENG 116  Effective Writing (or other ENG)
   HUM (CLA, ENG, HIS, REL, PHI or Lib. Arts)
   Note: Some Quebec medical schools require PHY 206 Waves and Optics in addition to PHY 193 and PHY 194. Students should research their preferred medical school to confirm whether or not they should take PHY 206.

2. Pre-Medicine Required Courses: (36 Credits)
The following courses must be taken in order to meet the requirements of the major.

   BCH 210  General Biochemistry
   BCH 313  Metabolism
   BIO 201  Cell and Molecular Biology
   BIO208  Genetics
   BIO 233  Human Anatomy
   BIO 336  Animal Physiology I
   BIO 337  Animal Physiology II
   CHM 111  Organic Chemistry I
   CHM 211  Organic Chemistry II
   PHY 101  Statistical Methods in Experimental Science
   PSY 101  Introduction to Psychology
   SOC 101  Introduction to Sociology

Entrance Requirements
The following criteria apply to entry into the B.Sc. Pre-medicine double major:

- a student must be admitted to a primary major at Bishop’s;
- a student can be admitted directly into the Pre-medicine major from high school or CEGEP if entering with an overall average of 85% or greater;
- if not admitted directly, a student can add the Pre-medicine double major once they have completed 60 course credits (not including lab credits), including advanced credits, and have an overall average of 75% or greater;
3. Pre-Medicine Required Options: (12 Credits)
Note: These courses must be taken in addition to the Y1 Humanities and English requirements.

At least 2 Second Language Courses.
At least 2 Courses in English Literature. This includes courses in literature and comprehension, not writing or composition.

4. Free Electives: (48 Credits)
These credits can be used to fulfill the requirements of the primary major.

Useful Electives
These courses are not required for the Pre-Medicine Major, but will deepen your background in biomedical topics and may enhance your success in writing the MCAT, preparing your application essay, and/or performing well in the interview.

- BCH 381 Immunology
- BCH 411 Molecular Biology
- BIO 311 Quantitative Methods in Health Sciences
- BIO 320 Programmed Cell Death
- BIO 352 Microbiology
- BIO 359 Human Genetics
- BIO 411 Seminar in Health Sciences
- CHM 121 Inorganic Chemistry I
- CHM 131 Physical Chemistry I
- CHM 141 Analytical Chemistry
- CHM 341 Principles and Practices of Chemical Spectroscopy and Mass Spectrometry
- CLA 170 Greek and Latin Terminology for Medicine and the Life Sciences
- PBI 275 Health Psychology 1
- PBI 276 Health Psychology 2
- PHY 206 Wave and Optics
- PSY 102 Introduction to Psychology II