

MAJOR IN MEDICAL BIOINFORMATICS

A degree containing this module normally requires 4 years for completion. The Major in Medical Bioinformatics can be completed in any regular undergraduate degree. When combined with one of the following Majors however, this module leads to a Bachelor of Medical Sciences (BMSc) degree: Biochemistry*, Epidemiology and Biostatistics, Interdisciplinary Medical Sciences (IMS)*, Medical Biophysics, Medical Cell Biology*, Microbiology and Immunology*, One Health*, Pathology*, Pharmacology* or Physiology*. See BACHELOR OF MEDICAL SCIENCES (BMSc) PROGRAM for more information. The Major in Medical Sciences cannot be taken in combination with the Major in Medical Bioinformatics.

* The combination of one of these Majors with the Major in Medical Bioinformatics can be completed in the Bachelor of Medical Sciences (BMSc) Honours degree with Double Majors, only.

ADMISSION REQUIREMENTS

Both 1000- and 2000-level courses are included in the Admission Requirements for students pursuing the Major in Medical Bioinformatics in BMSc degrees, since admission to the BMSc Program does not occur until Year 3. The Admission Requirements for students pursuing the Major in other regular undergraduate degrees include only 1000-level courses, since students may register in the Major in Year 2 in non-BMSc degrees. The Module requirements (below) are the same for all students completing the Major.

ADMISSION REQUIREMENTS FOR STUDENTS PURSUING THIS MAJOR MODULE *IN A BACHELOR OF MEDICAL SCIENCES (BMSc) DEGREE*:

Admission to this Major module occurs in Year 3 upon admission to Year 3 of the Bachelor of Medical Sciences (BMSc) Program. Students will usually complete [MEDICAL SCIENCES FIRST ENTRY](#) (Medical Sciences 1 and 2) prior to admission to a BMSc degree.

The 1000-level half courses listed below must each be completed with a mark of at least 60%:

1.0 course: Biology 1001A and Biology 1002B.

1.0 course: Chemistry 1301A/B and Chemistry 1302A/B.

0.5 course from: Calculus 1000A/B, Calculus 1500A/B.

0.5 course from: Applied Mathematics 1201A/B, Calculus 1301A/B, Calculus 1501A/B, Mathematics 1600A/B.

0.5 course from: Physics 1201A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B.

0.5 course from: Computer Science 1026A/B, Physics 1202A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B.

Note: One of Mathematics 1229A/B or Mathematics 1600A/B must be completed by the end of Year 3

The courses below must be completed with a minimum mark of 60% in each (unless otherwise indicated) prior to admission to the Major module in Year 3. These courses will also be used towards the Module requirements. See [ADMISSION TO THE BACHELOR OF MEDICAL SCIENCES \(BMSc\) PROGRAM](#) for additional requirements (averages, course load, etc.).

0.5 course: Biochemistry 2280A.

1.0 course: Biology 2382A/B, Biology 2581A/B.

0.5 course from: Biology 2244A/B, Statistical Sciences 2244A/B, Statistical Sciences 2858A/B.

0.5 course: Computer Science 2121A/B.

ADMISSION REQUIREMENTS FOR STUDENTS PURSUING THIS MAJOR *MODULE IN A DEGREE OTHER THAN A BACHELOR OF MEDICAL SCIENCES (BMSC) DEGREE:*

Completion of first-year requirements, including a mark of at least 60% in each of the 4.0 principal courses below:

1.0 course: Biology 1001A and Biology 1002B.

1.0 course: Chemistry 1301A/B and Chemistry 1302A/B.

0.5 course from: Calculus 1000A/B, Calculus 1500A/B.

0.5 course from: Applied Mathematics 1201A/B, Calculus 1301A/B, Calculus 1501A/B, Mathematics 1600A/B.

0.5 course from: Physics 1201A/B, Physics 1501A/B, the former Physics 1028A/B, the former Physics 1301A/B.

0.5 course from: Computer Science 1026A/B, Physics 1202A/B, Physics 1502A/B, the former Physics 1029A/B, the former Physics 1302A/B.

Note: One of Mathematics 1229A/B or Mathematics 1600A/B must be completed by the end of Year 3

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6.0 courses:

0.5 course: Biochemistry 2280A.

1.0 course: Biology 2382A/B, Biology 2581A/B.

0.5 course from: Biology 2244A/B, Statistical Sciences 2244A/B, Statistical Sciences 2858A/B.

0.5 course from: Computer Science 2121A/B.

0.5 course from: Data Science 2000A/B, Statistical Sciences 2857A/B.

0.5 course: Computer Science 2120A/B (see note below).

0.5 course: Medical Bioinformatics 3100A/B.

1.0 course from: Medical Bioinformatics 4650F/G, Medical Bioinformatics 4750F/G, Medical Bioinformatics 4850G.

1.0 course from: Anatomy and Cell Biology 2200A/B, Anatomy and Cell Biology 3200A/B, Anatomy and Cell Biology 3309, Biochemistry 3385B, Epidemiology 2200A/B, Medical Biophysics 3503G, Microbiology and Immunology 2500A/B, Pathology 3500, Pharmacology 3620, Physiology 3120, an additional 0.5 course in Medical Bioinformatics at the 4000-level.

Note: If Computer Science 1026A/B was completed with a mark of at least 60% but was not used to satisfy the 1000-level admission requirements, then it can be used in place of Computer Science 2120A/B as a modular course. If Computer Science 1026A/B was used to satisfy the 1000-level admission requirements, then one of the following half courses must be taken to replace Computer Science 2120A/B as a modular course: Computer Science 2210A/B, Computer Science 2211A/B, Computer Science 2212A/B/Y, Computer Science 2214A/B, Computer Science 3120A/B, Computer Science 3121A/B, Computer Science 3319A/B, Computer Science 3346A/B.