

# ACTUARIAL MATHEMATICS, B.COMM., HONOURS

## Degree Requirements

### Foundation Courses

All students regardless of admit type must complete the 30 credit hours of Foundation courses and achieve a minimum grade of "C" in each:

- ECON 1010 and ECON 1020
- MATH 1524
- STAT 1000 or STAT 1150
- 6 credit hours of Non-Business Electives or 3 credit hours Non-Business Elective plus MATH 1300
- 3 credit hours of Written English "W" course
- 3 credit hours of Non-Business Electives
- GMGT 1010

These 24 credit hours are the minimum admission requirements for Track 1 transfer students (see applicant information bulletin for details). MATH 1524 is the preferred MATH course for Asper students. Students who have completed one of MATH 1230 or MATH 1500 or MATH 1510 or the former MATH 1520, but not MATH 1524 are required to complete MATH 1300 or MATH 1301 or MATH 1310 for admission and degree requirements.

### Single Major Course Requirements for Direct Entry, Track 1 and Track 2 Students

The tables below list the Core courses that all Business students must complete. The courses are listed by year in a suggested sequence. Students normally complete the Core courses in the sequence shown.

To determine which additional courses to take each year (i.e., non-Core courses) students should consult the listing of course requirements for each year of their chosen Major.

Course	Title	Hours
<b>Year 1</b>		
ECON 1010	Introduction to Microeconomic Principles	3
ECON 1020	Introduction to Macroeconomic Principles	3
MATH 1524	Mathematics for Management and Social Sciences <sup>1</sup>	3
3 credit hours from one of the following STAT courses:		3
STAT 1000	Basic Statistical Analysis 1	
STAT 1150	Introduction to Statistics and Computing	
6 credit hours of Non-Business Electives or 3 credit hours Non-Business Electives plus MATH 1300 <sup>1,2</sup>		6
3 credit hours of Written English "W" <sup>3</sup>		3
3 credit hours of Non-Business Electives		3
GMGT 1010	Business and Society	3
GMGT 2070	Introduction to Organizational Behaviour <sup>4</sup>	3
MKT 2210	Fundamentals of Marketing <sup>4</sup>	3
<b>Hours</b>		<b>33</b>
<b>Year 2</b>		
ACC 1100	Introductory Financial Accounting	3
ACC 1110	Introductory Managerial Accounting	3

ENTR 2030	Introduction to Entrepreneurship: Business and Social Perspectives	3
FIN 2010	Introduction to Finance <sup>5</sup>	3
GMGT 1000	Writing Skills for Business	1.5
GMGT 2010	Business Communications <sup>6</sup>	3
HRIR 2440	Human Resource Management	3
IDM 1010	Communication for Career Management	1.5
IDM 1020	Data Software for Business	1.5
IDM 2020	Introduction to Business Analytics <sup>7</sup>	3
SCM 1000	Introduction to Project Management <sup>8</sup>	1.5
SCM 2160	Operations Management	3
<b>Hours</b>		<b>30</b>
<b>Year 3</b>		
IDM 3010	Sustainable Business	3
SGMT 2200	Global Management	3
<b>Hours</b>		<b>6</b>
<b>Years 3-4</b>		
Select a Major and Business Elective courses <sup>9</sup>		27
12-18 credit hours of a Major		
9-15 credit hours of Business Electives		
18 credit hours of Business or Non-Business Electives <sup>10</sup>		18
<b>Hours</b>		<b>45</b>
<b>Year 4</b>		
GMGT 3300	Business Law	3
GMGT 4010	Strategic Management <sup>11</sup>	3
<b>Hours</b>		<b>6</b>
<b>Total Hours</b>		<b>120</b>

- MATH 1524 is the preferred MATH course for Asper students. Students who have completed one of (MATH 1230 or MATH 1500 or MATH 1510 or the former MATH 1520) but not MATH 1524 are required to complete MATH 1300 (or MATH 1310) for admission and degree requirements. Finance majors who have not completed MATH 1524 must complete either MATH 1300 (C) or MATH 1310 (C).
- 6 credit hours of any Non-Business course Electives at the 1000 level or higher. If MATH 1524 was not completed, then MATH 1300 is required to meet degree requirements and should be taken as one of the Non-Business Electives. Finance majors should take STAT 2000 as one of the Non-Business Electives. Actuarial Mathematics majors should take MATH 1700 as one of the Non-Business Electives. Indigenous Business Studies Majors should take INDG 1220 and/or INDG 1240 as a Non-Business Elective(s). See Major descriptions for full details, including minimum required grades for major courses.
- Choose any course from the list of approved Written English Courses, with the exception of ARTS 1110, GMGT 1010, and GMGT 2010.
- GMGT 2070 and MKT 2210 can be taken in Year 2 if entering with 24 credit hours.
- The former FIN 2200 may be substituted for FIN 2010.
- It is highly recommended that all students take GMGT 1000 prior to GMGT 2010. Non-Asper students officially pursuing a Management Minor or in programs in which GMGT 2010 is mandatory or an elective may take GMGT 2010 without the GMGT 1000 prerequisite, with departmental permission.
- IDM 2020 or the former MIS 2000 or MSCI 2150 if completed before Fall 2023 (but not both). IDM 2020 with a grade C or higher is required to graduate with a Business Analytics Major.

<sup>8</sup> The former SCM 3280 may be substituted for SCM 1000.

<sup>9</sup> Major and Business Electives must total 27 credit hours. Business Electives must be at the 2000 level or higher. See Major descriptions for full details.

<sup>10</sup> A minimum of 9 credit hours of Business Electives or Non-Business Elective courses must be at the 2000 level or higher; the remaining must be at the 1000 level or higher.

<sup>11</sup> For Asper students following the curriculum prior to September 2023, the prerequisite of GMGT 4010 will be: Year 4 and [FIN 2200 (D), SCM 2160 (D) and ACC 1110 (D)]. Such students will have to contact an Asper Program Advisor for permission.

## Specific Requirements for the Major

The Actuarial Mathematics Major consists of 15 credit hours from:

Course	Title	Hours
15 credit hours from the following:		
ACT 2120	Interest Theory <sup>1</sup>	15
ACT 3130	Actuarial Models 1 <sup>2</sup>	
ACT 3230	Actuarial Models 2 <sup>2</sup>	
ACT 3340	Valuations for Actuarial Practice <sup>2</sup>	
ACT 4010	Regression Modeling in Actuarial Science <sup>3</sup>	
ACT 4020	Short Term Actuarial Mathematics I <sup>3</sup>	
ACT 4030	Short Term Actuarial Mathematics II <sup>3</sup>	
ACT 4040	Time Series and Statistical Learning in Actuarial Science <sup>3</sup>	
<b>Total Hours</b>		<b>15</b>

### Notes:

- MATH 2720 is a prerequisite for most of the Actuarial Mathematics Major courses, except ACT 2120. Students can take MATH 2720 as a Business or Non-Business Elective.
- STAT 2400 and STAT 2800 are prerequisites for ACT 3130, ACT 3230 and ACT 3340. Students can take STAT 2400 and STAT 2800 as Non-Business Electives.
- STAT 2150 and STAT 3100 are prerequisites for ACT 4010, ACT 4020, ACT 4030 and ACT 4040. Students can take STAT 2150 and STAT 3100 as Non-Business Electives.

To graduate with an Actuarial Mathematics Major, students are required to attain a minimum grade of "C+" in all 15 credit hours of Actuarial courses that will contribute to the Major.

Prior to registration, all students interested in or enrolled in Actuarial Mathematics are highly encouraged to consult the Director of the Warren Centre or an Undergraduate Program Advisor for program planning advice.

## Double Major Course Requirements for Direct Entry, Track 1 and Track 2 Students

The tables below list the Core courses that all Business students must complete. The courses are listed by year in a suggested sequence. Students normally complete the Core courses in the sequence shown.

To determine which additional courses to take each year (i.e., non-Core courses) students should consult the listing of course requirements for each year of their chosen Major.

Course	Title	Hours
<b>Year 1</b>		
ECON 1010	Introduction to Microeconomic Principles	3
ECON 1020	Introduction to Macroeconomic Principles	3
MATH 1524	Mathematics for Management and Social Sciences <sup>1</sup>	3
3 credit hours from one of the following STAT courses:		3
STAT 1000	Basic Statistical Analysis 1	
STAT 1150	Introduction to Statistics and Computing	
6 credit hours of Non-Business Electives or 3 credit hours Non-Business Electives plus MATH 1300 <sup>1,2</sup>		6
3 credit hours of Written English "W" <sup>3</sup>		3
3 credit hours of Non-Business Electives		3
GMGT 1010	Business and Society	3
GMGT 2070	Introduction to Organizational Behaviour <sup>4</sup>	3
MKT 2210	Fundamentals of Marketing <sup>4</sup>	3
<b>Hours</b>		<b>33</b>

<b>Year 2</b>		
ACC 1100	Introductory Financial Accounting	3
ACC 1110	Introductory Managerial Accounting	3
ENTR 2030	Introduction to Entrepreneurship: Business and Social Perspectives	3
FIN 2010	Introduction to Finance <sup>5</sup>	3
GMGT 1000	Writing Skills for Business	1.5
GMGT 2010	Business Communications <sup>6</sup>	3
HRIR 2440	Human Resource Management	3
IDM 1010	Communication for Career Management	1.5
IDM 1020	Data Software for Business	1.5
IDM 2020	Introduction to Business Analytics <sup>7</sup>	3
SCM 1000	Introduction to Project Management <sup>8</sup>	1.5
SCM 2160	Operations Management	3
<b>Hours</b>		<b>30</b>

<b>Year 3</b>		
IDM 3010	Sustainable Business	3
SGMT 2200	Global Management	3
<b>Hours</b>		<b>6</b>

<b>Years 3-4</b>		
Select two Majors and Business Elective courses <sup>9</sup>		45
12-18 credit hours of courses for the first Major		
12-18 credit hours of courses for the second Major		
0-3 credit hours of Business Electives. 3 credit hours of Business Electives are required if two 12 credit hour majors are declared. <sup>10</sup>		
9-18 credit hours of Business or Non-Business Electives <sup>10</sup>		
<b>Hours</b>		<b>45</b>

<b>Year 4</b>		
GMGT 3300	Business Law	3
GMGT 4010	Strategic Management <sup>11</sup>	3
<b>Hours</b>		<b>6</b>
<b>Total Hours</b>		<b>120</b>

- <sup>1</sup> MATH 1524 is the preferred MATH course for Asper students. Students who have completed one of (MATH 1230 or MATH 1500 or MATH 1510 or the former MATH 1520) but not MATH 1524 are required to complete MATH 1300 (or MATH 1310) for admission and degree requirements. Finance majors who have not completed MATH 1524 must complete either MATH 1300 (C) or MATH 1310 (C).
- <sup>2</sup> 6 credit hours of any Non-Business course Electives at the 1000 level or higher. If MATH 1524 was not completed, then MATH 1300 is required to meet degree requirements and should be taken as one of the Non-Business Electives. Finance majors should take STAT 2000 as one of the Non-Business Electives. Actuarial Mathematics majors should take MATH 1700 as one of the Non-Business Electives. Indigenous Business Studies Majors should take INDG 1220 and/or INDG 1240 as a Non-Business Elective(s). See Major descriptions for full details, including minimum required grades for major courses.
- <sup>3</sup> Choose any course from the list of approved Written English Courses, with the exception of ARTS 1110, GMGT 1010, and GMGT 2010.
- <sup>4</sup> GMGT 2070 and MKT 2210 can be taken in Year 2 if entering with 24 credit hours.
- <sup>5</sup> The former FIN 2200 may be substituted for FIN 2010.
- <sup>6</sup> It is highly recommended that all students take GMGT 1000 prior to GMGT 2010. Non-Asper students officially pursuing a Management Minor or in programs in which GMGT 2010 is mandatory or an elective may take GMGT 2010 without the GMGT 1000 prerequisite, with departmental permission.
- <sup>7</sup> IDM 2020 or the former MIS 2000 or MSCI 2150 if completed before Fall 2023 (but not both). IDM 2020 with a grade C or higher is required to graduate with a Business Analytics Major.
- <sup>8</sup> The former SCM 3280 may be substituted for SCM 1000.
- <sup>9</sup> Majors and Business Electives must total 45 credit hours. Business Electives must be at the 2000 Level or higher. See Major descriptions for full details.
- <sup>10</sup> A minimum of 9 credit hours of Business Electives or Non-Business Elective courses must be at the 2000 level or higher; the remaining must be at the 1000 level or higher.
- <sup>11</sup> For Asper students following the curriculum prior to September 2023, the prerequisite of GMGT 4010 will be: Year 4 and [FIN 2200 (D), SCM 2160 (D) and ACC 1110 (D)]. Such students will have to contact an Asper Program Advisor for permission.