**Mathematics – Actuarial Science Revision**

Summary

The Department of Mathematics would like to request a slight revision in the current requirements for a Bachelors of Arts and Bachelor of Science degree with major in Actuarial Science. This revision is requested to begin in Autumn 2020. The Actuarial Science program maintains close ties with various industry leaders. Strongly suggested feedback from industry has been a desire for increased communication skills from Actuarial Science majors. To this end, the requested revision is designed to enhance the communications skills of its majors and to allow these majors to be more prepared for their eventual careers.

Below are the proposed revisions:

1. As a prerequisite, add a required communication course. This would be satisfied by completing one of the following three courses: **Comm 2110**, **Comm 2131** or **Comm 2367**.
2. Add a required course to the major program: **English 3304** (Business and Professional Writing).

As the Department of Mathematics transitions from the current actuarial science requirements to this proposed revised program, current students in the actuarial science program will be held harmless through this change.

Actuarial Science – Current Requirements – Advising Sheet

**Part A:** Required Prerequisites

|  |  |
| --- | --- |
|  | ACCTMIS 2000 Foundations of Accounting (3 hrs) |
|  | Econ 2001.01 Principles of Microeconomics (3 hrs) |
|  | Econ 2002.01 Principles of Macroeconomics (3 hrs) |
|  | Math 1151 Calculus I (5 hrs) |
|  | Math 1152 Calculus II (5 hrs) |

|  |
| --- |
|  |

Choose **One** of the following

|  |  |
| --- | --- |
|  | CSE 1222 Intro to Computer Programming in C++ for Engineers and Scientists (3 hrs) |
|  | CSE 1223 Intro to Computer Programming in Java (3 hrs) |
|  | CSE 2111 Modeling and Problem Solving with Spreadsheets and Databases (3 hrs) |

**Part B:** Major Program (32-33 hrs)

|  |  |
| --- | --- |
|  | BusFin 3120 Foundations of Finance (3 hrs) |
|  | Math 2153 (4 hrs) |
|  | Math 2568 (3 hrs) |
|  | Math 3588 Introduction to Financial Mathematics (3 hrs) |
|  | Math 3618 Theory of Interest (3 hrs) |
|  | Math 4530 or Stat 4201 Probability or Introduction to Mathematical Statistics I (3-4 hrs) |
|  | Math 5632 Financial Economics (3 hrs) |
|  | Stat 4202 Introduction to Mathematical Statistics II (4 hrs) |

|  |
| --- |
|  |

Choose **One** of the following year-long sequences

|  |  |
| --- | --- |
|  | Math 5630 & 5631Life Contingencies I & II |
|  | Math 5633 & 5634Loss Models I & II |

Actuarial Science – Proposed Requirements – Advising Sheet

(Additions denoted with \* and bold)

**Part A:** Required Prerequisites

|  |  |
| --- | --- |
|  | ACCTMIS 2000 Foundations of Accounting (3 hrs) |
|  | Econ 2001.01 Principles of Microeconomics (3 hrs) |
|  | Econ 2002.01 Principles of Macroeconomics (3 hrs) |
|  | Math 1151 Calculus I (5 hrs) |
|  | Math 1152 Calculus II (5 hrs) |

|  |
| --- |
|  |

Choose **One** of the following

|  |  |
| --- | --- |
|  | CSE 1222 Intro to Computer Programming in C++ for Engineers and Scientists (3 hrs) |
|  | CSE 1223 Intro to Computer Programming in Java (3 hrs) |
|  | CSE 2111 Modeling and Problem Solving with Spreadsheets and Databases (3 hrs) |

|  |
| --- |
|  |

**\*Choose One of the following**

|  |  |
| --- | --- |
|  | \*Comm 2110 Principles of Effective Public Speaking (3 hrs) |
|  | **\*Comm 2131 Business and Professional Speaking (3 hrs)** |
|  | **\*Comm 2367 Persuasive Communication (3 hrs)** |

**Part B:** Major Program (35-36 hrs)

|  |  |
| --- | --- |
|  | BusFin 3120 Foundations of Finance (3 hrs) |
|  | **\*English 3304 Business and Professional Writing (3 hrs)** |
|  | Math 2153 (4 hrs) |
|  | Math 2568 (3 hrs) |
|  | Math 3588 Introduction to Financial Mathematics (3 hrs) |
|  | Math 3618 Theory of Interest (3 hrs) |
|  | Math 4530 or Stat 4201 Probability or Introduction to Mathematical Statistics I (3-4 hrs) |
|  | Math 5632 Financial Economics (3 hrs) |
|  | Stat 4202 Introduction to Mathematical Statistics II (4 hrs) |

|  |
| --- |
|  |

Choose **One** of the following year-long sequences

|  |  |
| --- | --- |
|  | Math 5630 & 5631Life Contingencies I & II (6 hrs total) |
|  | Math 5633 & 5634Loss Models I & II (6 hrs total) |

|  |
| --- |
| **Actuarial Science BS Sample 4-year Schedule (Current)** |
|  |  |  |  |  |
|   | Autumn |   | Spring |   |
| Year 1 | Math 1151 (Math & Logical Analysis GE) | 5 | Math 1152 (Open GE) | 5 |
|   | CSE 1222, 1223 or 2111 | 3 | AcctMIS 2000 | 3 |
|   | Econ 2001.03H (Social Science GE) | 3 | Econ 2002.03H (Social Science GE) | 3 |
|   | ARTSSCI 1100.01H | 1 | English 1110 | 3 |
|   | Visual & Performing Arts GE | 3 | Open GE | 3 |
|   | Semester Total | 15 | Semester Total | 17 |
| Year 2 | Math 2153 | 4 | Math 2568 | 3 |
|   | Math 3618 | 3 | Math 4530 or Stat 4201 | 3-4 |
|   | Foreign Language I GE | 4 | Foreign Language II GE | 4 |
|   | Physical Science with Lab GE | 5 | Second Writing GE | 3 |
|   |   |   | Cultures and Ideas GE | 3 |
|   | Semester Total | 16 | Semester Total | 16-17 |
| Year 3 | Stat 4202 | 4 | Math 3588 | 3 |
|   | BusFin 3120 | 3 | Math 5632 | 3 |
|   | Foreign Language III GE | 4 | Natural Science GE | 3-5 |
|   | Literature GE | 3 | Elective | 3 |
|   | Elective | 3 | Elective | 3 |
|   | Semester Total | 17 | Semester Total | 15-17 |
| Year 4 | Math 5630 or 5633 | 3 | Math 5631 or 5634 | 3 |
|   | Biological Science with Lab GE | 4 | History GE | 3 |
|   | Elective | 3 | Elective | 3 |
|   | Elective | 3 | Elective | 3 |
|   | Elective | 2 | Elective | 3 |
|   | Semester Total | 15 | Semester Total | 15 |
|  |  |  | Total Hours | 126-129 |
|  | Social Diversity & Global Studies GEs chosen to overlap other GE courses |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |
|  |  |  |  |  |
| **Actuarial Science BS Sample 4-year Schedule (Proposed)** |
|  |  |  |  |  |
|   | Autumn |   | Spring |   |
| Year 1 | Math 1151 (Math & Logical Analysis GE) | 5 | Math 1152 (Open GE) | 5 |
|   | CSE 1222, 1223 or 2111 | 3 | AcctMIS 2000 | 3 |
|   | Econ 2001.03H (Social Science GE) | 3 | Econ 2002.03H (Social Science GE) | 3 |
|   | ARTSSCI 1100.01H | 1 | English 1110 | 3 |
|   | Visual & Performing Arts GE | 3 | Open GE | 3 |
|   | Semester Total | 15 | Semester Total | 17 |
| Year 2 | Math 2153 | 4 | Math 2568 | 3 |
|   | Math 3618 | 3 | Math 4530 or Stat 4201 | 3-4 |
|   | Foreign Language I GE | 4 | Foreign Language II GE | 4 |
|   | Physical Science with Lab GE | 5 | **\*Comm 2367 (Second Writing GE)** | 3 |
|   |   |   | Cultures and Ideas GE | 3 |
|   | Semester Total | 16 | Semester Total | 16-17 |
| Year 3 | Stat 4202 | 4 | Math 3588 | 3 |
|   | BusFin 3120 | 3 | Math 5632 | 3 |
|   | Foreign Language III GE | 4 | Natural Science GE | 3-5 |
|   | Literature GE | 3 | Elective | 3 |
|   | Elective | 3 | Elective | 3 |
|   | Semester Total | 17 | Semester Total | 15-17 |
| Year 4 | Math 5630 or 5633 | 3 | Math 5631 or 5634 | 3 |
|   | Biological Science with Lab GE | 4 | History GE | 3 |
|   | **\*English 3304** | 3 | Elective | 3 |
|   | Elective | 3 | Elective | 3 |
|   | Elective | 2 | Elective | 3 |
|   | Semester Total | 15 | Semester Total | 15 |
|  |  |  | Total Hours | 126-129 |
|  | Social Diversity & Global Studies GEs chosen to overlap other GE courses |  |

|  |
| --- |
| **Actuarial Science BA Sample 4-year Schedule (Current)** |
|  |  |  |  |  |
|   | Autumn |   | Spring |   |
| Year 1 | Math 1151 (Math & Logical Analysis GE) | 5 | Math 1152 (Open GE) | 5 |
|   | CSE 1222, 1223 or 2111 | 3 | AcctMIS 2000 | 3 |
|   | Econ 2001.03H (Social Science GE) | 3 | Econ 2002.03H (Social Science GE) | 3 |
|   | ARTSSCI 1100.01H | 1 | English 1110 | 3 |
|   | Visual & Performing Arts GE | 3 | Open GE | 3 |
|   | Semester Total | 15 | Semester Total | 17 |
| Year 2 | Math 2153 | 4 | Math 2568 | 3 |
|   | Math 3618 | 3 | Math 4530 or Stat 4201 | 3-4 |
|   | Foreign Language I GE | 4 | Foreign Language II GE | 4 |
|   | Physical Science GE | 3-5 | Second Writing GE | 3 |
|   |   |   | Cultures and Ideas GE | 3 |
|   | Semester Total | 14-16 | Semester Total | 16-17 |
| Year 3 | Stat 4202 | 4 | Math 3588 | 3 |
|   | BusFin 3120 | 3 | Math 5632 | 3 |
|   | Foreign Language III GE | 4 | Natural Science with Lab GE | 4-5 |
|   | Literature GE | 3 | Elective | 3 |
|   | Elective | 3 | Elective | 3 |
|   | Semester Total | 17 | Semester Total | 16-17 |
| Year 4 | Math 5630 or 5633 | 3 | Math 5631 or 5634 | 3 |
|   | Biological Science GE | 3-5 | History GE | 3 |
|   | Elective | 3 | Elective | 3 |
|   | Elective | 3 | Elective | 3 |
|   | Elective | 2 | Elective | 3 |
|   | Semester Total | 14-16 | Semester Total | 15 |
|  |  |  | Total Hours | 124-130 |
|  | Social Diversity & Global Studies GEs chosen to overlap other GE courses |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |
|  |  |  |  |  |
| **Actuarial Science BA Sample 4-year Schedule (Proposed)** |
|  |  |  |  |  |
|   | Autumn |   | Spring |   |
| Year 1 | Math 1151 (Math & Logical Analysis GE) | 5 | Math 1152 (Open GE) | 5 |
|   | CSE 1222, 1223 or 2111 | 3 | AcctMIS 2000 | 3 |
|   | Econ 2001.03H (Social Science GE) | 3 | Econ 2002.03H (Social Science GE) | 3 |
|   | ARTSSCI 1100.01H | 1 | English 1110 | 3 |
|   | Visual & Performing Arts GE | 3 | Open GE | 3 |
|   | Semester Total | 15 | Semester Total | 17 |
| Year 2 | Math 2153 | 4 | Math 2568 | 3 |
|   | Math 3618 | 3 | Math 4530 or Stat 4201 | 3-4 |
|   | Foreign Language I GE | 4 | Foreign Language II GE | 4 |
|   | Physical Science GE | 3-5 | **\*Comm 2367 (Second Writing GE)** | 3 |
|   |   |   | Cultures and Ideas GE | 3 |
|   | Semester Total | 14-16 | Semester Total | 16-17 |
| Year 3 | Stat 4202 | 4 | Math 3588 | 3 |
|   | BusFin 3120 | 3 | Math 5632 | 3 |
|   | Foreign Language III GE | 4 | Natural Science with Lab GE | 4-5 |
|   | Literature GE | 3 | Elective | 3 |
|   | Elective | 3 | Elective | 3 |
|   | Semester Total | 17 | Semester Total | 16-17 |
| Year 4 | Math 5630 or 5633 | 3 | Math 5631 or 5634 | 3 |
|   | Biological Science GE | 3-5 | History GE | 3 |
|   | **\*English 3304** | 3 | Elective | 3 |
|   | Elective | 3 | Elective | 3 |
|   | Elective | 2 | Elective | 3 |
|   | Semester Total | 14-16 | Semester Total | 15 |
|  |  |  | Total Hours | 124-130 |
|  | Social Diversity & Global Studies GEs chosen to overlap other GE courses |  |