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| For Academic Affairs and Research Use Only |
| Proposal Number | SM08 |
| CIP Code:  |  |
| Degree Code: |  |

**Program Modification Form**

**[X] Undergraduate Curriculum Council**

**[ ] Graduate Council**

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| --- |
| **Modification Type: [ ]Admissions, [x ]Curricular Sequence, or [ ]Other**  |

Signed paper copies of proposals submitted for consideration are no longer required. Please type approver name and enter date of approval.

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| Hong Zhou | 4/11/2023 |

**Department Curriculum Committee Chair** |

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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**COPE Chair (if applicable)** |
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| Amanda Lambertus  | 4/11/2023 |

**Department Chair**  |

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| --- | --- |
| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**Head of Unit (if applicable)**   |
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| John Hershberger | 4/11/2023 |

**College Curriculum Committee Chair** |

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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**Undergraduate Curriculum Council Chair** |
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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**Director of Assessment** *(only for changes impacting assessment)* |

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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**Graduate Curriculum Committee Chair** |
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| --- | --- |
| Jennifer Bouldin | 4/11/2023 |

**College Dean** |

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| --- | --- |
| Len Frey | 4/20/2023 |

**Vice Chancellor for Academic Affairs** |
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| \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |

**General Education Committee Chair (if applicable)**   |  |

1. **Contact Person** (Name, Email Address, Phone Number)

Amanda Lambertus, alambertus@astate.edu, 3090

1. **Proposed Change** (for undergraduate curricular changes please provide an 8-semester plan (appendix A), if applicable)

We are adding MATH 4373 to the BS Actuarial Science Program. We had several hours of electives in the degree, and have chosen to add this course and remove three hours of electives.

1. **Effective Date**

Fall 2023

1. **Justification –** *Please provide details as to why this change is necessary.*

We developed this course to provide students with a rigorous mathematical background to help them be successful on the actuarial exam FM/2.

**Bulletin Changes**

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| **Instructions**  |
| **Please visit** [**http://www.astate.edu/a/registrar/students/bulletins/index.dot**](http://www.astate.edu/a/registrar/students/bulletins/index.dot) **and select the most recent version of the bulletin. Copy and paste all bulletin pages this proposal affects below. Please include a before (with changed areas highlighted) and after of all affected sections.** **\*Please note: Courses are often listed in multiple sections of the bulletin. To ensure that all affected sections have been located, please search the bulletin (ctrl+F) for the appropriate courses before submission of this form.**  |

**BEFORE**

4/11/23, 9:08 AM Program: Actuarial Science, BS - Arkansas State University - Acalog ACMS™ https://catalog.astate.edu/preview\_program.php?catoid=3&poid=1988&returnto=77&print 1/2

**2022-2023 Undergraduate Bulletin**

**Arkansas State University**

**Actuarial Science, BS**

A complete 8-semester degree plan is available at https://www.astate.edu/info/academics/degrees/

**UNIVERSITY REQUIREMENTS**

See University General Requirements for Baccalaureate degrees

**FIRST YEAR MAKING CONNECTIONS COURSE:**

MATH 1093 - Making Connections Mathematics **Sem. Hrs: 3**

**GENERAL EDUCATION REQUIREMENTS:**

See General Education Curriculum for Baccalaureate degrees **Sem. Hrs: 36**

**Students with this major must take the following:**

MATH 2204 - Calculus I **Sem. Hrs: 4**

PHYS 2034 - University Physics I **Sem. Hrs: 4**

***OR***

PHYS 2054 - General Physics I **Sem. Hrs: 4**

ECON 2313 - Principles of Macroeconomics **Sem. Hrs: 3**

ECON 2323 - Principles of Microeconomics **Sem. Hrs: 3**

COMS 1203 - Oral Communication **Sem. Hrs: 3** *(Required Departmental Gen. Ed. Option)*

**MAJOR REQUIREMENTS:**

ACCT 2033 - Introduction to Financial Accounting **Sem. Hrs: 3**

ACCT 2133 - Introduction to Managerial Accounting **Sem. Hrs: 3**

FIN 3713 - Business Finance **Sem. Hrs: 3**

FIN 3723 - Financial Analytics and Modeling **Sem. Hrs: 3**

FIN 3773 - Financial Risk Management **Sem. Hrs: 3**

FIN 4723 - Investments **Sem. Hrs: 3**

ISBA 2033 - Programming Fundamentals **Sem. Hrs: 3**

MATH 2214 - Calculus II **Sem. Hrs: 4**

MATH 3243 - Linear Algebra **Sem. Hrs: 3**

MATH 3254 - Calculus III **Sem. Hrs: 4**

MATH 4373 – Financial Mathematics Sem. Hrs: 3

MATH 4403 - Differential Equations **Sem. Hrs: 3**

MATH 4573 - Actuarial Science Seminar **Sem. Hrs: 3**

REI 3513 - Risk and Insurance **Sem. Hrs: 3**

STAT 3233 - Applied Statistics I **Sem. Hrs: 3**

STAT 4443 - Stochastic Processes **Sem. Hrs: 3**

STAT 4453 - Probability and Statistics I **Sem. Hrs: 3**

STAT 4463 - Probability and Statistics II **Sem. Hrs: 3**

STAT 4483 - Statistical Methods Using R **Sem. Hrs: 3**

**Select two of the following:**

ISBA 3413 - Big Data for Business **Sem. Hrs: 3**

ISBA 3423 - Data Visualization for Business **Sem. Hrs: 3**

ISBA 3663 - Data Mining for Business **Sem. Hrs: 3**

**Select one of the following:**

REI 4513 - Property and Liability Insurance **Sem. Hrs: 3**

REI 4543 - Life Insurance **Sem. Hrs: 3**

**Sub-total: ~~65~~ 68**

**ELECTIVES:**

Electives (~~Eight~~ Five hours must be upper-level) **Sem. Hrs: ~~16~~ 13**

**TOTAL REQUIRED HOURS: 120**

**After**

**2022-2023 Undergraduate Bulletin**

**Arkansas State University**

**Actuarial Science, BS**

A complete 8-semester degree plan is available at https://www.astate.edu/info/academics/degrees/

**UNIVERSITY REQUIREMENTS**

See University General Requirements for Baccalaureate degrees

**FIRST YEAR MAKING CONNECTIONS COURSE:**

MATH 1093 - Making Connections Mathematics **Sem. Hrs: 3**

**GENERAL EDUCATION REQUIREMENTS:**

See General Education Curriculum for Baccalaureate degrees **Sem. Hrs: 36**

**Students with this major must take the following:**

MATH 2204 - Calculus I **Sem. Hrs: 4**

PHYS 2034 - University Physics I **Sem. Hrs: 4**

***OR***

PHYS 2054 - General Physics I **Sem. Hrs: 4**

ECON 2313 - Principles of Macroeconomics **Sem. Hrs: 3**

ECON 2323 - Principles of Microeconomics **Sem. Hrs: 3**

COMS 1203 - Oral Communication **Sem. Hrs: 3** *(Required Departmental Gen. Ed. Option)*

**MAJOR REQUIREMENTS:**

ACCT 2033 - Introduction to Financial Accounting **Sem. Hrs: 3**

ACCT 2133 - Introduction to Managerial Accounting **Sem. Hrs: 3**

FIN 3713 - Business Finance **Sem. Hrs: 3**

FIN 3723 - Financial Analytics and Modeling **Sem. Hrs: 3**

FIN 3773 - Financial Risk Management **Sem. Hrs: 3**

FIN 4723 - Investments **Sem. Hrs: 3**

ISBA 2033 - Programming Fundamentals **Sem. Hrs: 3**

MATH 2214 - Calculus II **Sem. Hrs: 4**

MATH 3243 - Linear Algebra **Sem. Hrs: 3**

MATH 3254 - Calculus III **Sem. Hrs: 4**

MATH 4373 – Financial Mathematics Sem. Hrs: 3

MATH 4403 - Differential Equations **Sem. Hrs: 3**

MATH 4573 - Actuarial Science Seminar **Sem. Hrs: 3**

REI 3513 - Risk and Insurance **Sem. Hrs: 3**

STAT 3233 - Applied Statistics I **Sem. Hrs: 3**

STAT 4443 - Stochastic Processes **Sem. Hrs: 3**

STAT 4453 - Probability and Statistics I **Sem. Hrs: 3**

STAT 4463 - Probability and Statistics II **Sem. Hrs: 3**

STAT 4483 - Statistical Methods Using R **Sem. Hrs: 3**

**Select two of the following:**

ISBA 3413 - Big Data for Business **Sem. Hrs: 3**

ISBA 3423 - Data Visualization for Business **Sem. Hrs: 3**

ISBA 3663 - Data Mining for Business **Sem. Hrs: 3**

**Select one of the following:**

REI 4513 - Property and Liability Insurance **Sem. Hrs: 3**

REI 4543 - Life Insurance **Sem. Hrs: 3**

**Sub-total: 68**

**ELECTIVES:**

Electives (Five hours must be upper-level) **Sem. Hrs: 13**

**TOTAL REQUIRED HOURS: 120**

**Appendix A, 8-Semester Plan**

(**Referenced in #2** - **Undergraduate Proposals Only)**

*Instructions: Please identify new courses in italics*.

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| **Arkansas State University-Jonesboro****Degree: Bachelor of Science****Major: Actuarial Science****Year: 2022-2023** |
| Students requiring developmental course work based on low entrance exam scores (ACT, SAT, ASSET, COMPASS) may not be able to complete this program of study in eight (8) semesters. Developmental courses do not count toward total degree hours. **Students having completed college level courses prior to enrollment will be assisted by their advisor in making appropriate substitutions. In most cases, general education courses may be interchanged between semesters.** A minimum of 45 hours of upper division credit (3000-4000 level) is required for this degree. |
| **Year 1** |  | **Year 1** |
| **Fall Semester** |  | **Spring Semester** |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |  | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |
| MATH 1093 | Making Connections | 3 |  |  | MATH 2214 | Calculus II | 4 |  |
| MATH 2204 | Calculus I | 4 | X |  | ENG 1013 | Composition II | 3 | X |
| ENG 1003 | Composition I | 3 | X |  |  ENG 2003 or ENG 2013ENG 2013 orPHIL 1103 | Intro to World Lit I or World Literature Since 1660Intro to World Lit II orIntro to Philosophy | 3 | X |
|  MUS 2503 or THEA 2503 or ART 2503 | Fine Arts-Musical or Fine Arts-Theatre or Fine Arts -Visual | 3 | X |   |  COMS 1203 | Oral Communication | 3 | X |
|  HIST 2763 or HIST 2773 orPOSC 2103 | U.S. to 1876 orU.S. since 1876 orIntro to U.S. Gov’t | 3 | X |  |  ECON 2313 | Principles of Macroecon | 3 | X |
|  |  |  |  |  |  |  |  |  |
| **Total Hours** |  | 16 |  |  | **Total Hours** |  | 16 |  |
| **Year 2** |  | **Year 2** |
| **Fall Semester** |  | **Spring Semester** |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |  | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |
| MATH 3254 | Calculus III | 4 |  |  | MATH 4403 | Differential Equations | 3 |  |
| ACCT 2033 | Intro to Financial Accounting | 3 |  |  | ACCT 2133 | Intro to Managerial Accounting | 3 |  |
| Life Science | BIO with LAB | 4 | X |  | PHYS 2034 orPHYS 2054 | University Physics IGeneral Physics I | 4 | X |
| ISBA 2033 | Programming Fundamentals | 3 |  |  | ECON 2323 | Principles of Microeconomics | 3 | X |
|  | Elective | 1 |  |  | STAT 3233 | Applied Stat I | 3 |  |
|  |  |  |  |  |  |  |  |  |
| **Total Hours** |  | 15 |  |  | **Total Hours** |  | 16 |  |
| **Year 3** |  | **Year 3** |
| **Fall Semester** |  | **Spring Semester** |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |  | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |
|  | Elective | 3 |  |  | *STAT 4443* | *Stochastic Processes* | *3* |  |
| FIN 3713 | Business Finance | 3 |  |  | MATH 3243 | Linear Algebra | 3 |  |
| REI 3513 | Risk and Insurance | 3 |  |  | FIN 3723 | Financial Analytics & Modeling | 3 |  |
| STAT 4483  | Statistical Methods Using R  | 3 |  |  |  | Elective  | 3 |  |
| ISBA 3663 | Data Mining for Business | 3 |  |  | ISBA 3413ISBA 3423 or |  | 3 |  |
|  |  |  |  |  |  |  |  |  |
| **Total Hours** |  | 15 |  |  | **Total Hours** |  | 15 |  |
| **Year 4** |  | **Year 4** |
| **Fall Semester** |  | **Spring Semester** |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |  | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |
| *FIN 3773* | *Financial Risk Management* | *3* |  |  | STAT 4463 | Probability and Statistics II | 3 |  |
| STAT 4453 | Probability and Statistics I | 3 |  |  | *MATH 4573* | *Actuarial Science Seminar* | 3 |  |
| REI 4513 orREI 4543 | Property and Liability Insurance or Life Insurance (Choose 1) | 3 |  |  | FIN 4723 | Investments | 3 |  |
| MATH 4373 | Financial Mathematics | 3 |  |  | REI 4513 orREI 4543 | Property and Liability Insurance or Life Insurance (Choose 1) | 3 |  |
|  | Elective | 3 |  |  |  | Elective  | 3 |  |
|  |  |  |  |  |  |  |  |  |
| **Total Hours** |  | 12 or 15 |  |  | **Total Hours** |  | 12 or 15 |  |
| **Total Jr/Sr Hours \_\_54\_ Total Degree Hours \_\_120\_** |
| **Graduation Requirements:** |