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| For Academic Affairs and Research Use Only | |
| Proposal Number | SM23 |
| 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 | 9/16/2021 |   **Department Curriculum Committee Chair** | |  |  | | --- | --- | | Alicia Shaw | 10/8/2021 |   **COPE Chair (if applicable)** |
| |  |  | | --- | --- | | Amanda Lambertus | 9/16/2021 |   **Department Chair** | |  |  | | --- | --- | | Lance G. Bryant | 10/8/2021 |   **Head of Unit (if applicable)** |
| |  |  | | --- | --- | | John Hershberger 10/1/2021 | Enter date |   **College Curriculum Committee Chair** | |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **Undergraduate Curriculum Council Chair** |
| |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **Director of Assessment** *(only for changes impacting assessment)* | |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **Graduate Curriculum Committee Chair** |
| |  |  | | --- | --- | | Lynn Boyd | 10/4/2021 |   **College Dean** | |  |  | | --- | --- | | Alan Utter | 11/16/2021 |   **Vice Chancellor for Academic Affairs** |
| |  |  | | --- | --- | | \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Enter date |   **General Education Committee Chair (if applicable)** |  |

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

Lisa Rice, [lrice@astate.edu](mailto:lrice@astate.edu), 972-3090

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

Addition of a MATH for Secondary Teachers course to meet 2020 National Council of Teachers of Mathematics (NCTM) Specialized Program Assessment (SPA) Standards.

1. **Effective Date**

Fall 2022

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

We are adding MATH 3373 to help meet the accreditation requirements of NCTM. Currently, in the BSE program there are no courses related to deepening the mathematical knowledge of students who are preparing to be 7-12 mathematics teachers specific to the mathematics they are expected to teach. This course will give students a deeper perspective of the mathematics they will teach at the 7-12 level by exploring the underlying mathematical concepts, connections, and procedures. This course will give students a foundation to build mathematics lessons and assessments in other courses, such as SCED 3515 Performance Based Instructional Design and EDMA 4563 Methods and Materials for Teaching Mathematics. This course will also help students prepare for the Praxis II Mathematics Content exam, which they need to pass to obtain a teaching license. To make room for the new course, we needed to remove the SCOM 1203 requirement. Student screening into the teacher education program will still need to demonstrate Speech Proficiency during their interview process. The Speech Proficiency will be documented using the form from the Professional Education Programs Office.

MATH 4581 is also being added as a requirement. Our students have been taking this class for years and we would like to make it a permanent addition to the program. The BSE Mathematics students take a 1 credit hour seminar course for professional development during their internship semester. The seminar builds a professional learning community among the interns and provides them support for completing SPA assessments, edTPA (the edTPA is a required assessment given by all BSE programs), and preparation for job interviews.

**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.** |

**Major in Mathematics**

**Bachelor of Science in Education**

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

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| --- | --- |
| **University Requirements:** | |
| See University General Requirements for Baccalaureate degrees (p. 42) | |
| **First Year Making Connections Course:** | **Sem. Hrs.** |
| MATH 1093, Making Connections - Mathematics | **3** |
| **General Education Requirements:** | **Sem. Hrs.** |
| See General Education Curriculum for Baccalaureate degrees (p. 78)  **Students with this major must take the following:**  *MATH 2204, Calculus I*  *PHYS 2034, University Physics I* ***OR***  *PHYS 2054, General Physics I*  *HIST 2763, The United States To 1876* ***OR***  *HIST 2773, The United States Since 1876*  *POSC 2103, Introduction to United States Government*  *PSY 2013, Introduction to Psychology*  **Select one of the following courses: (required Dept Gen Ed Option)**  ANTH 2233, Introduction to Cultural Anthropology  GEOG 2613, Introduction to Geography  HIST 1013, World History to 1500  HIST 1023, World History since 1500  *~~COMS 1203, Oral Communication (Required Departmental Gen. Ed. Option)~~* | **36** |
| **Major Requirements:** | **Sem. Hrs.** |
| MATH 2183, Discrete Structures | 3 |
| MATH 2214, Calculus II | 4 |
| MATH 3254, Calculus III | 4 |
| MATH 3243, Linear Algebra | 3 |
| MATH 3303, Modern Algebra I | 3 |
| MATH 3323, Mathematics Modeling | 3 |
| MATH 3343, College Geometry | 3 |
| MATH 3353, History of Mathematics | 3 |
| *MATH 3373, Mathematics for Secondary Teachers.*  MATH 4553, Advanced Calculus I  MATH 4581, Mathematics Seminar | *3*  3  1 |
| STAT 3233, Applied Statistics I | 3 |
| STAT 4453, Probability and Statistics I | 3 |
| **Sub-total** | **39** |
| **Additional Requirements:** | **Sem. Hrs.** |
| **~~Select one of the following courses:~~**  ~~ANTH 2233, Introduction to Cultural Anthropology~~  ~~GEOG 2613, Introduction to Geography~~  ~~HIST 1013, World History to 1500~~  ~~HIST 1023, World History since 1500~~ | ~~3~~ |
| PHYS 2044, University Physics II **OR**  PHYS 2064, General Physics II | 4 |
| Computer Science Elective | 3 |
| **Sub-total** | **7** |
| **Professional Education Requirements:**  Grade of “C” or better required for all Professional Education Requirements.  Courses denoted below with an asterisk (\*) require admission to the Teacher Education Program. For additional information, see Professional Education Requirements for Sec­ondary Majors in the College of Education and Behavioral Science section. | **Sem. Hrs.** |
| \*EDMA 4563, Methods and Materials for Teaching Mathematics in the Secondary School | 3 |
| ELSE 3643, The Exceptional Student in the Regular Classroom | 3 |
| PSY 3703, Educational Psychology | 3 |

Major in Mathematics (cont.)

**Bachelor of Science in Education**

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

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| --- | --- |
| SCED 2513, Introduction to Secondary Teaching | 3 |
| \*SCED 3515, Performance Based Inst. Design | 5 |
| \*SCED 4713, Educational Measurement with Computer Applications | 3 |
| \*TIMA 4826, Teaching Internship in the Secondary School | 12 |
| **Sub-total** | **32** |
| **Additional General Requirements for Teacher Education:** | **Sem. Hrs.** |
| HLTH 2513, Principles of Personal Health | **3** |
| **~~Electives:~~** | **~~Sem. Hrs.~~** |
| ~~Electives~~ | **~~1~~** |
| **Total Required Hours:** | **120** |

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Mathematics (MATH)

**MATH 3273. Applied Complex Analysis.**  Survey of complex analysis with emphasis on developing skills needed for applications and understanding of derivatives and integrals of complex

functions. Prerequisite, MATH 3254. Fall, even.

**MATH 3303. Modern Algebra I.**  Introduction to the theory of groups and rings, with emphasis

on modular arithmetic proofs. Prerequisite, MATH 2214. Fall.

**MATH 3323. Mathematical Modeling.**  Construction of mathematical models for use with problems in the mathematical sciences, operations research, engineering and the management and

life sciences. Prerequisite, MATH 2214. Spring.

**MATH 3343. College Geometry.**  Origin and development of Euclidean and Transformational

Geometry, explorations of spherical and hyperbolic geometries. Implementation of geometric

software. Prerequisite, MATH 2214. Spring.

**MATH 3353. History of Mathematics.** Origin and development of modern mathematical concepts. Topics include systems of numeration, algebra, geometry, calculus, and the foundations of

the real number system. Prerequisite, MATH 2214. Fall, odd.

***MATH 3373. Mathematics for Secondary Teachers. Mathematics at the secondary level from an advanced perspective. Functions including polynomial and transcendental; geometry and measurement; probability and statistics; number systems. Course may not be used to satisfy a general education mathematics requirement. For secondary mathematics education majors only.***

**MATH 4403.  Differential Equations.**   Topics in the elementary theory of differential equations,

including existence theorems and applications. Prerequisite, MATH 3254. Fall, Spring.

**MATH 4413. Partial Differential Equations.** A study of the method of separation of variables to solve

some standard partial differential equations; Fourier series; boundary value problems; Sturm-Liouville

theory; and the method of characteristics. Prerequisite, MATH 4403. Dual listed with MATH 5413.

Spring, odd.

**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 in Education**  **Major: Mathematics**  **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 2013 or  PHIL 1103 | Intro to World Lit I or  Intro to World Lit II or  Intro 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 |  | ANTH 2233 or  GEOG 2613 or  HIST 1013 or  HIST 1023 | Intro to Anthropology or  Intro to Geography or  World Civ to 1660 or  World Civ since 1660 | 3 | X |
| HIST 2763 or  HIST 2773 or | U.S. to 1876 or  U.S. since 1876 | 3 | X |  | PSY 2013 | Intro to Psychology | 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 3343 | College Geometry | 3 |  |
| MATH 3303 | Modern Algebra I | 3 |  |  | MATH 3323 | Mathematical Modeling | 3 |  |
| MATH 2183 | Discrete Structures | 3 |  |  | BIOL 1003 and BIOL 1001 | Biological Science and Lab for Biological Science | 4 | X |
| PHYS 2034 or PHYS 2054 | University Physics I or General Physics I | 4 | X |  | PHYS 2044 or PHYS 2064 | University Physics II or General Physics II | 4 |  |
| SCED 2513 | Intro to Secondary Teaching | 3 |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **Total Hours** |  | 17 |  |  | **Total Hours** |  | 14 |  |
| **Year 3** | | | |  | **Year 3** | | | |
| **Fall Semester** | | | |  | **Spring Semester** | | | |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |  | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |
| STAT 4453 | Probability and Statistics I | 3 |  |  | EDMA 4563 | Methods and Materials for Teaching Mathematics | 3 |  |
| *MATH 3373* | *Math For Secondary Teachers* | 3 |  |  | SCED 3515 | Performance Based Instructional Design | 5 |  |
| MATH 3353 | History of Math | 3 |  |  | MATH 3243 | Linear Algebra | 3 |  |
| PSY 3703 | Educational Psychology | 3 |  |  | STAT 3233 | Applied Statistics I | 3 |  |
| ELSE 3643 | Exceptional Student in the Regular Classroom | 3 |  |  |  |  |  |  |
| **Total Hours** |  | 15 |  |  | **Total Hours** |  | 14 |  |
| **Year 4** | | | |  | **Year 4** | | | |
| **Fall Semester** | | | |  | **Spring Semester** | | | |
| **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |  | **Course No.** | **Course Name** | **Hrs** | **Gen Ed** |
| MATH 4553 | Advanced Calculus I | 3 |  |  | TIMA 4826 | Teaching Internship | 12 |  |
| POSC 2103 | Intro to U.S. Government | 3 | X |  | *MATH 4851* | *Seminar* | 1 |  |
| SCED 4713 | Educational Measurement with Computer Applications | 3 |  |  |  |  |  |  |
| HLTH 2513 | Principles of Personal Health | 3 |  |  |  |  |  |  |
| Computer Science elective | Computer Science elective | 3 |  |  |  |  |  |  |
| **Total Hours** |  | 15 |  |  | **Total Hours** |  | 13 |  |
| **Total Jr/Sr Hours \_61\_\_ Total Degree Hours \_120\_\_** | | | | | | | | |
| **Graduation Requirements:** | | | | | | | | |