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|  | **MAJOR CURRICULUM PROPOSAL**  **New Course and Degree Requirement Modifications to the BSc. in Mathematics Education**  Proposer: Professor Andrew Douglas  Date: October 22, 2015 |
|  |  |

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1. **Introduction**

**Curriculum Modification Proposal Form**

|  |  |
| --- | --- |
| **Title of Proposal** | New Course and Degree Requirement Modifications to the BSc. in Mathematics Education |
| **Date** | October 22, 2015 |
| **Major or Minor** | Major |
| **Proposer’s Name** | Andrew Douglas |
| **Department** | Mathematics |
| **Date of Departmental Meeting in which proposal was approved** | 11/5/15 |
| **Department Chair Name** | Sandie Han |
| **Department Chair Signature and Date** | 4/6/15 |
| **Academic Dean Name** | Justin Vazquez-Poritz |
| **Academic Dean Signature and Date** | 4/6/16 |
| **Brief Description of Proposal** | The proposal contains two curricular changes: The creation of a new course *MEDU 4040 Supervised Student Teaching in Mathematics Education*;and modifications to the degree requirements of the BSc. in Mathematics Education.  New Course  The new course MEDU 4040incorporates the existing courses MEDU 4010 and MEDU 4020 and expands their combined credits and class hours.  Degree Requirement Modifications to the BSc. in Mathematics Education  The proposed degree requirement changes to the BSc. in Mathematics Education are as follows:   * Addition of EDU 3670, and MEDU 4040 as required courses. * Removal of MEDU 4010 and MEDU 4020 as required courses. * Modifications to the number of credits that may be taken from the Mathematical Applications component of the degree, and the number of Program Specific degree requirement credits. |
| **Brief Rationale for Proposal**  (Provide a concise summary of why this proposed change is important to the department. More detailed content will be provided in the proposal body). | New Course  Experience has shown that there are too few class hours to support the rigorous requirements of student teaching placements in MEDU 4010 and MEDU 4020. As a result, we have increased the class hours in MEDU 4040 over the combined class hours of MEDU 4010 and MEDU 4020.  We have increased the credits allotted to the student teaching placements in MEDU 4040 over those in MEDU 4010 and MEDU 4020 to better reflect the huge amount of work demanded in these placements.  Finally, incorporating MEDU 4010 and MEDU 4020 into the single course MEDU 4040 allows students to perform their student teaching in one semester while taking few other courses. In so doing, student are better able to teach consecutive lessons in their placements which is a necessity of student teaching placements.  Degree Requirement Modifications to the BSc. in Mathematics Education  EDU 3670 is being added to the list of required courses to better align the BSc. in Mathematics Education with state and accreditation standards.  The rationale for replacing MEDU 4010 and MEDU 4020 with MEDU 4040 is articulated above in the rationale for the new course MEDU 4040.  The numbers of credits within the Mathematical Applications component and program specific degree requirement credits are being modified to accommodate the above changes. |
| **Proposal History**  (Please provide history of this proposal: is this a resubmission? An updated version? This may most easily be expressed as a list). | * Passed the Mathematics Department Curriculum Committee: 10/29/15 * Passed the Mathematics Department: 11/5/15 * Submitted to the College Council Curriculum Committee: 1/31/16 |

**All Proposal Check List**

|  |  |
| --- | --- |
| Completed CURRICULUM MODIFICATION FORM including: |  |
| * Brief description of proposal | X |
| * Rationale for proposal | X |
| * Date of department meeting approving the modification | X |
| * Chair’s Signature | X |
| * Dean’s Signature | X |
| Evidence of consultation with affected departments  List of the programs that use this course as required or elective, and courses that use this as a prerequisite. | NA |
| Documentation of Advisory Commission views (if applicable). | NA |
| Completed [Chancellor’s Report Form](http://openlab.citytech.cuny.edu/collegecouncil/files/2014/08/2013-10-09-Chancellor_Report_Quick_Reference_Guide1.doc). | X |

1. **New Course: MEDU 4040 Supervised Student Teaching in Mathematics Education**

**New Course Proposal Form**

|  |  |
| --- | --- |
| **Course Title** | Supervised Student Teaching in Mathematics Education |
| **Proposal Date** | October 22, 2015 |
| **Proposer’s Name** | Andrew Douglas |
| **Course Number** | MEDU 4040 |
| **Course Credits, Hours** | 3 cl hours**,** 16 field hrs/wk, 9cr |
| **Course Prerequisites** | MEDU 3020, MAT 2572, MAT 3075, MAT 3080, MAT 4050, and department approval is required one semester in advance. |
| **Catalog Course Description** | The course consists of a field-based, student teaching experience and a seminar component. The field-based experience involves 20 days or 120 hours of supervised student teaching in grades 7 through 9; and 20 days or 120 hours of supervised student teaching in grades 10 through 12. Under the guidance and supervision of an experienced teacher and a faculty member, students will implement and refine pedagogical strategies, classroom management techniques, and assessment approaches. |
| **Brief Rationale**  Provide a concise summary of why this course is important to the department, school or college. | See the Brief Rationale of Page 3. |
| **Intent to Submit as Common Core**  If this course is intended to fulfill one of the requirements in the common core, then indicate which area. | No |
| **Intent to Submit as An Interdisciplinary Course** | No |
| **Intent to Submit as a Writing Intensive Course** | No |

**Course Proposal Checklist**

|  |  |
| --- | --- |
| **Completed NEW COURSE PROPOSAL FORM** |  |
| * Title, Number, Credits, Hours, Catalog course description | X |
| * Brief Rationale | X |
| Completed [Library Resources and Information Literacy Form](http://openlab.citytech.cuny.edu/collegecouncil/files/2014/08/curriculum_modification_library_form.doc) | X |
| **Course Outline**  Include within the outline the following. |  |
| Hours and Credits for Lecture and Labs  If hours exceed mandated Carnegie Hours, then rationale for this | X |
| Prerequisites/Co- requisites | X |
| Detailed Course Description | X |
| Course Specific Learning Outcome and Assessment Tables   * Discipline Specific * General Education Specific Learning Outcome and Assessment Tables | X |
| Example Weekly Course outline | X |
| Grade Policy and Procedure | X |
| Recommended Instructional Materials (Textbooks, lab supplies, etc) | X |
| Library resources and bibliography | NA |
| **Course Need Assessment.**  Describe the need for this course. Include in your statement the following information. |  |
| Target Students who will take this course. Which programs or departments, and how many anticipated?  Documentation of student views (if applicable, e.g. non-required elective). | X |
| Projected headcounts (fall/spring and day/evening) for each new or modified course. | X |
| If additional physical resources are required (new space, modifications, equipment), description of these requirements. If applicable, Memo or email from the VP for Finance and Administration with written comments regarding additional and/or new facilities, renovations or construction. | X |
| Where does this course overlap with other courses, both within and outside of the department? | X |
| Does the Department currently have full time faculty qualified to teach this course? If not, then what plans are there to cover this? | X |
| If needs assessment states that this course is required by an accrediting body, then provide documentation indicating that need. | NA |
| **Course Design**  Describe how this course is designed. |  |
| Course Context (e.g. required, elective, capstone) | X |
| Course Structure: how the course will be offered (e.g. lecture, seminar, tutorial, fieldtrip)? | X |
| Anticipated pedagogical strategies and instructional design (e.g. Group Work, Case Study, Team Project, Lecture) | X |
| How does this course support Programmatic Learning Outcomes? | X |
| Is this course designed to be partially or fully online? If so, describe how this benefits students and/or program. | NA |
| **Additional Forms for Specific Course Categories** |  |
| [Interdisciplinary Form](http://openlab.citytech.cuny.edu/collegecouncil/files/2014/08/Application-for-Interdisciplinary-Course-Designation.docx) (if applicable) | NA |
| [Common Core (Liberal Arts) Intent to Submit](http://openlab.citytech.cuny.edu/collegecouncil/files/2014/08/CommonCoreCourseSubmissionForm_4.2.12.doc) (if applicable) | NA |
| Writing Intensive Form if course is intended to be a WIC (under development) | NA |
| If course originated as an experimental course, then results of evaluation plan as developed with director of assessment. | NA |
| **(Additional materials for** [Curricular Experiments](http://www.300jaystreet.com/college-council/curriculum_proposals/curricular-experiments)) |  |
| Plan and process for evaluation developed in consultation with the director of assessment. (Contact Director of Assessment for more information). | NA |
| Established Timeline for Curricular Experiment | NA |

**New Course Proposal Description**

The new course *MEDU 4040 Supervised Student Teaching in Mathematics Education* is being proposed. This course incorporates and expands two existing courses: MEDU 4010 Supervised Student Teaching and Seminar in Middle School Mathematics and MEDU 4020 Supervised Student Teaching and Seminar in High School Mathematics.

In particular, the seminar component of MEDU 4040 is being increased to 3 hours from a combined seminar component in MEDU 4010 and MEDU 4020 of 2 hours. The number of field hours in MEDU 4040, and the combination of those in MEDU 4010 and MEDU 4020 remain unchanged. However, we increase the credits allotted to student teaching from a combined 4 in MEDU 4010 and MEDU 4020 to 6 in MEDU 4040. The total credits of MEDU 4040 is 9, whereas the combined total credits of MEDU 4010 and MEDU 4020 is 6.

**New Course Proposal Rationale**

The new course MEDU 4040 incorporates and expands the existing courses MEDU 4010 and MEDU 4020. In the following section, we describe our proposal to replace MEDU 4010 and MEDU 4020 with MEDU 4040 as a requirement of the BSc. in Mathematics Education. There are three reasons that this curricular change is necessary.

First, experience has shown that there are too few class hours to support the rigorous requirements of student teaching placements in MEDU 4010 and MEDU 4020. In particular, during student teaching placements, students must complete a challenging portfolio assessment for initial teacher state certification (called the Education Teacher Performance Assessment (edTPA) [A]); and, in addition, students must now complete an extensive unit plan project to be used in national accreditation of teacher preparation programs [B]. In reaction to these challenges, we have proposed to increase the class hours to 3 in MEDU 4040, compared to a combined 2 hours in MEDU 4010 and MEDU 4020.

Second, the number of credits allotted to student teaching placements (i.e., field hours) in MEDU 4010 and MEDU 4020 is wholly inadequate compared to the amount of work required from these placements. This issue is made acute by the required edTPA assessment piece, and unit plan project mentioned above. To address this imbalance, we have proposed to increase the credits allotted to student teaching from a combined 4 in MEDU 4010 and MEDU 4020 to 6 in MEDU 4040.

Third, the design of MEDU 4010 and MEDU 4020 within the BSc. in Mathematics Education program necessitates that students take these course across two semesters, and at the same time take a significant number of other courses. This structure makes it difficult for students to teach consecutive lessons in their student teaching placement. However, students must teach consecutive lessons as a requirement of the edTPA and the unit plan project. MEDU 4040 would alleviate this issue by allowing students to complete their student teaching in a single semester, while taking few additional courses.

[A] EdTPA Secondary Mathematics Assessment Manual. Board of Trustees of the Leland Junior University. 2012. Retrieved from <http://www.marquette.edu/education/current_students/documents/edTPASecondaryMathHandbook2015.pdf>

[B] Douglas, Andrew. Unit Plan Senior Project. Retrieved from <https://sites.google.com/site/cunyrt/Unit_Plan_Senior_Project_revised.pdf>

**Course Syllabus**

|  |  |
| --- | --- |
|  | **Department of Mathematics****New York City College of Technology****The City University of New York** |

### **DEPARTMENT:** Mathematics

**PREPARED BY:** Professor Andrew Douglas

**COURSE:** MEDU 4040

**TITLE:** Supervised Student Teaching in Mathematics Education

**DESCRIPTION:** The course consists of a field-based, student teaching experience and a seminar component. The field-based experience involves 20 days or 120 hours of supervised student teaching in grades 7 through 9; and 20 days or 120 hours of supervised student teaching in grades 10 through 12. Under the guidance and supervision of an experienced teacher and a faculty member, students will implement and refine pedagogical strategies, classroom management techniques, and assessment approaches.

**TEXTS:** [1] Rubenstein, R. N., Beckman, C. E., & Thompson, D. R. (2004). Teaching and learning middle grades mathematics. Emeryville, CA: Key Curriculum Press.

[2] C. E. Beckmann, D. R. Thompson, R.N. Rubenstein. Teaching and Learning High School Mathematics. Wiley, 2010.

[3] National Council of Teachers of Mathematics (NCTM): Principles and Standards for School Mathematics. NCTM 2000.

**RESOURCES:** [4] A. Douglas, Pedagogical Content Knowledge: Revised Content Specialty Test Preparation Manual, 2015.

<https://sites.google.com/site/andrewfdouglas/supplementary_notes_pck_cst.pdf>

[5] EdTPA Secondary Mathematics Assessment Handbook, Board of Trustees of the Leland Stanford Junior University, 2012.

[6] New York State P-12 Common Core Learning Standards for Mathematics

http://www.p12.nysed.gov/ciai/common\_core\_standards/pdfdocs/nysp12cclsmath.pdf

[7] A. Douglas, Mathematics Education Handbook, 2014.

**CREDIT HOURS:** 3 cl hours**,** 16 field hrs/wk, 9 cr

**PREREQUISITES:** MEDU 3020, MAT 2572, MAT 3075, MAT 3080, MAT 4050, and department approval is required one semester in advance.

**COREQUISITE:** EDU 4600

**LEARNING OUTCOMES:**

|  |  |
| --- | --- |
| **INSTRUCTIONAL OBJECTIVES**  Upon completion of the course, students will be able to: | **ASSESSMENT** |
| Create mathematics lesson plans, and unit plans consistent with the state curriculum, NCTM guidelines, and best pedagogical practices. | Lesson plans, unit plans, portfolio. |
| Analyze students’ work to identify difficulties, depth of understanding, errors, and misconceptions. | Class discussion, problem sets, case studies, and writing assignments. |
| Describe appropriate and effective instructional and assessment strategies for essential, or difficult concepts in the secondary mathematics curriculum. | Class discussion, lesson plans, unit plans, portfolio. |
| Effectively implement lesson plans and unit plans in the mathematics classroom appropriate to a variety of mathematical abilities and learning styles, including a variety of disabilities and special health-care needs, with a focus on developmental and content issues specific to the mathematics classroom. | Student teaching placements |
| Effectively incorporate manipulatives, technology and other materials in the classroom. | Student teaching placements, lesson plans, unit plans. |
| Assess student progress and assign grades to students in a fair and equitable manner. | Class discussion, student teaching placements, lesson plans, unit plans. |

|  |  |
| --- | --- |
| **GENERAL EDUCATION LEARNING OUTCOMES** | **ASSESSMENT** |
| Gather, interpret, evaluate, and apply information discerningly from a variety of sources. | Classroom discussion, writing assignments, student presentations, problem sets, portfolio. |
| Acquire tools for lifelong learning. | Classroom discussion, writing assignments, student presentations, portfolio. |
| Use creativity to solve problems. | Problem sets, group work. |
| Show curiosity and the desire to learn. | Classroom discussion, group work, presentations, portfolio. |

**GRADING PROCEDURE:**

* Problem sets and writing assignments 25%
* Student created lesson plans 25%
* Teaching Portfolio (including a unit plan, samples of student work, video of teaching) 30%
* Presentations 20%

**TEACHING AND LEARNING METHODS:**

* Guided discussion
* Guided discovery
* Cooperative learning
* Hands-on activities
* Case studies
* Technology employed in the class may include dynamic geometry software, computer algebra systems, interactive whiteboards, and document cameras.
* Student teaching placements

**COURSE OUTLINE:**

|  |  |  |
| --- | --- | --- |
| WEEK | UNIT | RESOURCES |
| 1-2 | * Introduction to student teaching * Review of Common Core State Standards in Mathematics * Review of National Council of Teachers of Mathematics Principles and Standards | [3], [6], [7] |
| 3 | Introduction to the edTPA   * Overview of the edTPA * Requirements of the edTPA * Sample edTPA submissions | [3], [5], [6], [7] |
| 4-6 | Lesson and unit planning   * Review the requirements of creating a lesson plan and unit plan. * Class activity: Creating a unit plan to be used in student placements. | [1] Chapter 3; [2] Chapter 4, [3], [6] |
| 7-8 | Technology in mathematics education   * Create activities using technology such as graphing calculators, computer algebra systems, dynamic geometry software, and smart boards * Prepare and demonstrate a mini lesson involving technology. | [2] Section 3.4, SmartBoard\*, GeoGebra\*\* |
| 9 | Classroom management   * Design student responsibility policy. * Discuss classroom management issues at that students encountered in their placements and management techniques resolving these situations. | [5] |
| 10 | Literacy and communication skills development   * Discuss ways to develop literacy and communication skills in the mathematics   classroom (e.g., written assignments, writing math in words, learning logs)  Writing in mathematics, the Common Core State Standards in Mathematics, and the NCTM Principles and Standards | [3], [6] |
| 11 | Designing quizzes, tests, and exams   * Analyze exams from students’ classroom placements. * Group activity: Create a quiz and a test appropriate for a class from the student teaching placements. Present an assessment measure. | [1] Chapter 4; [2] Chapter 5 |
| 12 | Alternative assessment: learning logs, portfolio assessment, performance assessment   * Group Activity: Create a learning log to be used in a high school mathematics class. * Group Activity: Design a lesson plan with a performance assessment. | [1] Chapter 4; [2] Chapter 5 |
| 13-15 | edTPA   * Guided workshop towards the completion of the edTPA workshop | [3], [5], [6], [7] |

\* There is an interactive SmartBoard in room N707.

\*\* GeoGebra is free Dynamic Geometry Software. It is used, for instance, in MEDU 2010. It is installed on all computers in N723.

Version: Fall 2015

**LIBRARY RESOURCES & INFORMATION LITERACY: MAJOR CURRICULUM MODIFICATION**

|  |  |  |
| --- | --- | --- |
| **1** | **Title of proposal**  MEDU 4040 Supervised Student Teaching in Mathematics Education | **Department/Program**  Mathematics |
|  | **Proposed by** (include email & phone)  Andrew Douglas  [adouglas2@gc.cuny.edu](mailto:adouglas2@gc.cuny.edu)  718-260-4966 | **Expected date course(s) will be offered:** Spring 2017  **Number of students** 10 |

|  |  |
| --- | --- |
| **2** | **Are City Tech library resources sufficient for course assignments? Please elaborate.**  Yes. Students do not need any resources from the library. The only resources for the proposed course are the required text book, and supplemental notes provided by the instructor. |

|  |  |
| --- | --- |
| **3** | **Are additional resources needed for course assignments? Please provide details about format of resources (e.g., ebooks , journals, DVDs, etc.), author, title, publisher, edition, date, and price.**  No |

|  |  |
| --- | --- |
| **4** | **Library faculty focus on strengthening students' information literacy skills in finding, evaluating, and ethically using information. We can collaborate on developing assignments and offer customized information literacy instruction and research guides for your course.**  **Do you plan to consult with the library faculty subject specialist for your area? Please elaborate.**  No |

|  |  |
| --- | --- |
| **5** | **Library Faculty Subject Selector** Cailean Cooney  **Comments and Recommendations:** The Library provides resources relevant to the course topic, available both on site and online, including print and electronic books, and journal subscriptions in Mathematics Teaching and Research. Print books from other CUNY campuses are alsoavailable to request. The Library will consider additional resource requests based on budgetary means.  Date 9/28/15 |

**Course Needs Assessment**

Target Students: Students in the BSc. in Mathematics Education

Projected Headcount: 10 students. The course would be offered once per academic year.

Required Physical Resources: No additional physical resources are required for the proposed new course.

Course Overlap: The course MEDU 4040 is intended to replace MEDU 4010 and MEDU 4020. There will not be course overlap with MEDU 4040 and other courses in the Mathematics Education program.

Qualified Faculty: The Mathematics Department has several faculty members with expertise in mathematics and mathematics education who can teach the course.

**Course Design**

Course Context: MEDU 4040 will be included as a required course in the BSc. in Mathematics Education, as is described in the following section of this proposal.

Course Structure: The course will consist of 2 supervised student teaching placements, each 120 hours in duration. Accompanying the placements is a weekly 3-hour seminar.

Pedagogical Strategies:

* Guided discussion
* Guided discovery
* Cooperative learning
* Student guided lessons
* Hands-on activities
* Case studies
* Technology employed in the class may include dynamic geometry software, computer algebra systems, interactive whiteboards, and document cameras.
* Supervised student teaching placements

Support of Programmatic Learning Outcomes: The following learning outcomes of the BSc. in Mathematics Education are directly addressed by the proposed course.

* Create instructional plans to promote and enhance critical thinking, and problem solving abilities.
* Develop instructional plans based on current adolescent development and learning theories.
* Plan, implement, and evaluate effective instruction in the middle and secondary school classroom.

A significant component of the course involves creating and implementing lesson plans that incorporate the outcomes listed above.

**New Course Chancellor’s Report Form**

**Section AIV: New Courses**

**New course to be offered in the Mathematics Department**

|  |  |
| --- | --- |
| **Department(s)** | Mathematics |
| **Academic Level** | [ X ] Regular  [   ] Compensatory  [   ] Developmental  [   ] Remedial |
| **Subject Area** | Mathematics |
| **Course Prefix** | MEDU |
| **Course Number** | 4040 |
| **Course Title** | Supervised Student Teaching in Mathematics Education |
| **Catalog Description** | The course consists of a field-based, student teaching experience and a seminar component. The field-based experience involves 20 days or 120 hours of supervised student teaching in grades 7 through 9; and 20 days or 120 hours of supervised student teaching in grades 10 through 12. Under the guidance and supervision of an experienced teacher and a faculty member, students will implement and refine pedagogical strategies, classroom management techniques, and assessment approaches. |
| **Prerequisite** | MEDU 3020, MAT 2572, MAT 3075, MAT 3080, MAT 4050, and department approval is required one semester in advance. |
| **Corequisite** | EDU 4600 |
| **Pre- or corequisite** |  |
| **Credits** | 9 |
| **Contact Hours** | 3 cl hours**,** 16 field hrs/wk |
| **Liberal Arts** | [ ] Yes  [  ] No |
| **Course Attribute (e.g. Writing Intensive, etc)** | Includes student teaching placements |
| **Course Applicability** | [X] Major  [ ] Gen Ed Required [] Gen Ed - Flexible [] Gen Ed - College Option [ ] English Composition [ ] World Cultures [ ] Speech [ ] Mathematics [ ] US Experience in its Diversity [ ] Interdisciplinary  [ ] Science [ ] Creative Expression [ ] Advanced Liberal Arts  [ ] Individual and Society [ ] Scientific World |
| **Effective Term** | Spring 2017 |

**Rationale:** Experience has shown that there are too few class hours to support the rigorous requirements of student teaching placements in MEDU 4010 and MEDU 4020. As a result, we have increased the class hours in MEDU 4040 over the combined class hours of MEDU 4010 and MEDU 4020.

We have increased the credits allotted to the student teaching placements in MEDU 4040 over those in MEDU 4010 and MEDU 4020 to better reflect the huge amount of work demanded in these placements.

Finally, incorporating MEDU 4010 and MEDU 4020 into the single course MEDU 4040 allows students to perform their student teaching in one semester while taking few other courses. In so doing, student are better able to teach consecutive lessons in their placements which is a necessity of student teaching placements.

1. **Degree Requirement Modifications to the BSc. in Mathematics Education**

**Degree Requirement Modifications Proposal Description**

The proposal contains the following changes to the degree requirements of the BSc. in Mathematics Education.

* Addition of *EDU 3670 Methods of Literacy Instruction in Teacher Education* as a required course
* Addition of *MEDU 4040 Supervised Student Teaching in Mathematics Education* as a required course
* Removal of *MEDU 4010* and *MEDU 4020* as required courses
* Modifications to the number of credits that may be taken from the Mathematical Applications component of the degree, and the number of Program Specific degree requirement credits.

**Degree Requirement Modifications Proposal Rationale**

EDU 3670 is being added to the list of required courses to better align the Bachelor of Science in Mathematics Education with state and accreditation standards. At present, the mathematics education program at City Tech, unlike most other such programs across New York State, does not have a stand-alone course to address this standard.

Literacy instruction and development falls within the Content and Pedagogical Knowledge standards of the Council for the Accreditation of Educator Preparation (CAEP). Under this standard, programs which prepare secondary educators must ensure that their teacher candidates are able to “…develop and implement support for learner literacy development across content areas.”

The New York State Education Department (NYSED) requires that all teacher education programs provide instruction in language acquisition and literacy development. Their requirements state that all teacher candidates must be trained in supporting “…language acquisition and literacy development by native English speakers and students who are English language learners -- and (attain) skill in developing the listening, speaking, reading, and writing skills of all students.”

EDU 3670 addresses the standards set by CAEP and NYSED. At present, these standards are not adequately addressed within our teaching methods courses: MEDU 3011 and MEDU 3020.

Most mathematics education programs in New York State require a stand-alone literacy instruction and development course. Examples include,

* SEED 3401 Language and Literacy in Urban School Contexts; Brooklyn College
* TCHL-GE 2275 Language and Literacy Acquisition and Development; New York University
* SEDC 210 Building the Foundations of Literacy in Grades 7-12; Hunter College
* LIN 344 Language Acquisition and Literacy Development; Stony Brook University
* EDUC 215 Foundations of Literacy in the Secondary School; SUNY Geneseo

The new course MEDU 4040 incorporates and expands the existing courses MEDU 4010 and MEDU 4020. We propose to replace MEDU 4010 and MEDU 4020 with MEDU 4040 as a requirement of the BSc. in Mathematics Education. There are three reasons that necessitate this curricular change.

First, experience has shown that there are too few class hours to support the rigorous requirements of student teaching placements in MEDU 4010 and MEDU 4020. In reaction to these challenges, we have proposed to increase the class hours to 3 in MEDU 4040, compared to a combined 2 hours in MEDU 4010 and MEDU 4020.

Second, the number of credits allotted to student teaching placements (i.e., field hours) in MEDU 4010 and MEDU 4020 is wholly inadequate compared to the amount of work required from these placements. To address this imbalance, we have proposed to increase the credits allotted to student teaching from a combined 4 in MEDU 4010 and MEDU 4020 to 6 in MEDU 4040.

Third, the design of MEDU 4010 and MEDU 4020 within the BSc. in Mathematics Education program necessitates that students take these course across two semesters, and at the same time take a significant number of other courses. This structure makes it difficult for students to teach consecutive lessons, which is a necessity of placements. MEDU 4040 would alleviate this issue by allowing students to complete their student teaching in a single semester, while taking few additional courses.

The number of credits within the Mathematical Applications component and program specific degree requirement credits are being modified to accommodate the above changes.

# Degree Requirement Modifications Chancellor’s Report Form

# Section AIII: Changes in Degree Programs

**The following revisions are proposed for the Bachelor of Science in Mathematics Education**

**Program:** Bachelor of Science in Mathematics Education

**Program Code:** 35103 (HEGIS: 0833.00)

**Effective Date:** Fall 2016

|  |  |  |  |
| --- | --- | --- | --- |
| **FROM:** | | **TO:** | |
| **PROGRAM-SPECIFIC DEGREE REQUIREMENTS**  **~~77 CREDITS~~** | | **PROGRAM-SPECIFIC DEGREE REQUIREMENTS**  **83 CREDITS** | |
| MAT 1475 Calculus I | Met as GenEd | MAT 1475 Calculus I | Met as GenEd |
| MAT 1476L Calculus Laboratory | 1cr | MAT 1476L Calculus Laboratory | 1cr |
| MAT 1575 Calculus II | 4cr | MAT 1575 Calculus II | 4cr |
| MAT 2071 Introduction to Proofs and Logic | 4cr | MAT 2071 Introduction to Proofs and Logic | 4cr |
| MAT 2580 Introduction to Linear Algebra | 3cr | MAT 2580 Introduction to Linear Algebra | 3cr |
| MAT 2572 Probability and Mathematical Statistics I | 4cr | MAT 2572 Probability and Mathematical Statistics I | 4cr |
| MAT 2630 Applied Mathematics Technology-Numerical Methods | 3cr | MAT 2630 Applied Mathematics Technology-Numerical Methods | 3cr |
| MAT 3021 Number Theory | 4cr | MAT 3021 Number Theory | 4cr |
| MAT 3050 Geometry I | 4cr | MAT 3050 Geometry I | 4cr |
| MAT 3075 Introduction to Real Analysis | 4cr | MAT 3075 Introduction to Real Analysis | 4cr |
| MAT 3080 Modern Algebra | 4cr | MAT 3080 Modern Algebra | 4cr |
| MAT 4030 History of Mathematics | 3cr | MAT 4030 History of Mathematics | 3cr |
| MAT 4050 Geometry II | 3cr | MAT 4050 Geometry II | 3cr |
| MEDU 1010 Foundations of Mathematics Education | 3cr | MEDU 1010 Foundations of Mathematics Education | 3cr |
| MEDU 1021 Teaching and Learning Strategies for Mathematics Teachers | 3cr | MEDU 1021 Teaching and Learning Strategies for Mathematics Teachers | 3cr |
| MEDU 2010 Technology in Mathematics Education | 2cr | MEDU 2010 Technology in Mathematics Education | 2cr |
| MEDU 3011 Methods of Teaching Middle School Mathematics | 4cr | MEDU 3011 Methods of Teaching Middle School Mathematics | 4cr |
| MEDU 3020 Methods of Teaching High School Mathematics | 4cr | MEDU 3020 Methods of Teaching High School Mathematics | 4cr |
| ~~MEDU 4010 Supervised Student Teaching and Seminar in Middle School Mathematics~~ | ~~3cr~~ | MEDU 4040 Supervised Student Teaching in Mathematics Education | 9cr |
| ~~MEDU 4020 Supervised Student Teaching and Seminar in Secondary School Mathematics~~ | ~~3cr~~ |
| PSY 1101 Introduction to Psychology | 3cr | PSY 1101 Introduction to Psychology | 3cr |
| EDU 2455 Methods and Materials for Special Needs Students | 3cr | EDU 2455 Methods and Materials for Special Needs Students | 3cr |
| EDU 2610 Child and Adolescent Development | 3cr | EDU 2610 Child and Adolescent Development | 3cr |
| EDU 3610 Human Learning and Instruction | 3cr | EDU 3610 Human Learning and Instruction | 3cr |
|  | | EDU 3670 Methods of Literacy Instruction in Teacher Education | 3cr |
| EDU 4600 Professional Development Seminar | 2cr | EDU 4600 Professional Development Seminar | 2cr |
| **Applied Mathematics Component (Select up to ~~11 credits~~ to make 120)** | | **Applied Mathematics Component (Select up to 6 credits to make 120)** | |
| **TOTAL CREDITS REQUIRED FOR THE DEGREE** | **120** | **TOTAL CREDITS REQUIRED FOR THE DEGREE** | **120** |

**Rationale:** EDU 3670 is being added to the list of required courses to better align the Bachelor of Science in Mathematics Education with state and accreditation standards.

The new course MEDU 4040 incorporates and expands the existing courses MEDU 4010 and MEDU 4020. In particular, the credits of MEDU 4040 have increased to 9 over the combined credits of 6 in MEDU 4010 and MEDU 4020. We are replacing MEDU 4010 and MEDU 4020 with MEDU 4040 as a requirement of the BSc. in Mathematics Education.

The number of credits within the Mathematical Applications component and program specific degree requirement credits are being modified to accommodate the above changes.