

Exploration and Integration Proposal Form: Fitchburg State University All University Committee 2022-2023

General Education Critical and Creative Thinking Across the Disciplines Designations
General Education Advancing and Applying Liberal Arts and Sciences Learning Designations

1. Proposal Title *

Add IHIP designation to Math 4600

Brief Synopsis of Proposal *

Summarize the outcome of this proposal, including changes that need to be made by Registrar. (Ex. Courses with titles and numbers listed below given ER designation)

Add IHIP designation to Math 4600

Course Title(s) and Number(s) *

If more than one course is being included for a single designation, list all course titles and numbers as they appear in the catalog

Math 4600: Capstone in Mathematics

2. Sponsor/Contact Person *

Peter Staab

3. Sponsor's Department *

Mathematics

Sponsor's Phone *

x4857

Sponsor's Email *

pstaab@fitchburgstate.edu

4. All proposals that involve curriculum change require review by the Department Curriculum Committee and the Department Chair.

Department Curriculum Committee Vote (For / Against / Abstain) *

5/0/0

Name of Chair, Department Curriculum Committee *

Jessica Oehrlein

Name of Chair, Department *

Peter Staab

Collaborating Parties

If multiple departments are submitting a group of sections with a single designation, provide all the information requested in section #4 for each of the collaborating parties.

5. Are you requesting an Exploration (Critical and Creative Thinking across the Disciplines) designation? *

Yes

No

If Yes, complete parts A, B, and C below. (For multiple courses, provide separate information for each course using chart provided.)

A. Which Exploration (Critical and Creative Thinking across the Disciplines) outcome(s) would this course fulfill?

If you are seeking designations for one course, you may choose up to 2. If you are only seeking Integration designations (AIA), proceed to # 4. For multiple courses, only one designation may be chosen. Additional designations will require a separate submission.

- Civic Learning (CV)
- Diverse Perspectives (DP)
- Ethical Reasoning (ER)
- Fine Arts Expression and Analysis (FA)
- Historical Inquiry and Analysis (HI)
- Literary Inquiry and Analysis (LI)
- Personal Wellness (PW)
- Procedural and Logical Thinking (PL)
- Scientific Inquiry and Analysis (SI)

B. Which additional skills will this course provide?

Please choose at least one skill and no more than two. For multiple courses, provide separate information for each course using the same Bulk Course Proposal Chart (upload below): <https://docs.google.com/document/d/1vxFiSF2xyx59AFYz0Cf73R5e2tGaRASxmKAK1DnQXfM/edit?usp=sharing>

- Creative Thinking
- Critical Thinking
- Digital Literacy
- Information Literacy
- Quantitative Reasoning
- Reading
- World Languages, Speaking and Listening
- Writing

C. Demonstration of Student Learning

Review the guidance document for the learning outcome(s) related to the Exploration requirement and the skill(s) you have checked: <https://www.fitchburgstate.edu/academics/academic-affairs-division/shared-governance/all-university-committee/las-subcommittee>. Please describe how this course demonstrates student learning in the specified outcome(s) and skill(s). For multiple courses, provide separate information for each course using this Exploration Bulk Course Proposal Chart (download, complete, upload below): <https://docs.google.com/document/d/1vxFiSF2xyx59AFYz0Cf73R5e2tGaRASxmKAK1DnQXfM/edit?usp=sharing>

Exploration Bulk Course Proposal Chart (if applicable)

For multiple courses, provide separate information for each course using this Bulk Course Proposal Chart (download, complete, upload here): <https://docs.google.com/document/d/1vxFiSF2xyx59AFYz0Cf73R5e2tGaRASxmKak1DnQXfM/edit?usp=sharing>

6. Are you requesting an Integration (Advancing and Applying Liberal Arts and Sciences Learning) designation (AIA)? *

Yes

No

If Yes, complete parts A and B below. (For multiple courses, provide separate information for each course using table below.)

A. Provide one or both of the following:

For multiple courses, provide separate information for each course using this Integration Bulk Course Proposal Chart (download, complete, upload below): <https://docs.google.com/document/d/1eAFBv2cUaLOrtJEfZDStkBudTp8KsLeKdpF177Y-30/edit?usp=sharing>

Identify the General Education course(s) that are prerequisite, corequisite, or concurrent courses, and verify that the course is 2000 level or higher to justify the AIA designation.

Review the guidance document for the Integrative Learning outcome and describe how this course demonstrates student learning for this outcome.

<https://www.fitchburgstate.edu/academics/academic-affairs-division/shared-governance/all-university-committee/las-subcommittee>

This course already has the AIA designation. This form is to request IHIP designation.

B. Does this course fulfill the Integrative High Impact Practice (IHIP) designation?

Guidance Document: <https://www.fitchburgstate.edu/academics/academic-affairs-division/shared-governance/all-university-committee/las-subcommittee>. For multiple courses, provide separate information for each course using the same Integration Bulk Course Proposal Chart (upload below): <https://docs.google.com/document/d/1eAFBv2cUaLOrtJEfZDStkBudTp8KsLeKdpF177Y-30/edit?usp=sharing>

Yes

No

If Yes, select one from the list below

See Integrative High Impact Practice Guidance Document: <https://www.fitchburgstate.edu/academics/academic-affairs-division/shared-governance/all-university-committee/las-subcommittee>. For multiple courses, provide separate information for each course using the same Integration Bulk Course Proposal Chart (upload below):

<https://docs.google.com/document/d/1eIAFBv2cUaLQrtJEfZDStkBudTp8KsLeKdpF177Y-30/edit?usp=sharing>

- Civic Engagement
- Experiential Learning/Internship
- Student-Faculty Research Project
- Student-Faculty Creative Project
- Study Abroad
- Team Teaching/Learning Community
- Writing Intensive

Demonstration of Student Learning

Review the guidance document for Integrative High Impact Practice: <https://www.fitchburgstate.edu/academics/academic-affairs-division/shared-governance/all-university-committee/las-subcommittee>. Provide a brief explanation in support of the designation describing the high impact practice. For multiple courses, provide separate information for each course using the same Integration Bulk Course Proposal Chart (upload below): <https://docs.google.com/document/d/1eIAFBv2cUaLQrtJEfZDStkBudTp8KsLeKdpF177Y-30/edit?usp=sharing>

A Student-faculty research project in which students individually or collaboratively help shape the research question, refine the research techniques, collect novel information, data or observations, and produce an extensive research paper and poster or oral presentation.

Resources

Please identify any additional resources that will be required. Attach documentation below demonstrating consultation with the appropriate Dean.

none.

Consultation with Dean

Please identify any additional resources that will be required. Attach documentation demonstrating consultation with the appropriate Dean.

Integration Bulk Course Proposal Chart (if applicable)

For multiple courses, provide separate information for each course using this Bulk Course Proposal Chart (download, complete, upload here): <https://docs.google.com/document/d/1eIAFBv2cUaLQrtJEfZDStkBudTp8KsLeKdpF177Y-30/edit?usp=sharing>

7. Course Access: Are this course and its prerequisites open to all majors? *

Provide information for all courses

Yes

No

If No, explain why this course (or courses) should be considered part of the General Education curriculum without being open to all students.

8. Course Impacts: Will this course, with its prerequisites impact any other program within the university? *

Impacts on other programs may include, but are not limited to affecting course enrollments for courses offered in other programs, altering faculty teaching loads for members of other departments/programs, require specific resources (e.g. library materials).

Yes

No

If Yes, identify department(s) and describe the nature of the impact.

Include information for all courses to which this applies.

If Yes, attach documentation of consultation with impacted departments.

Include information for all courses to which this applies.

9. Syllabus and Requirements *

Attach preliminary syllabus/course outline that includes the following elements (a syllabus guide is available in the Faculty Handbook): Course Information; Course Description; Course Goals and Learning Objectives; Texts and Additional Resources; Requirements for Assessment

See attachment.

Syllabus for Math 4600: Capstone in Mathematics

Course and Instructor Information

Semester	Fall 20XX
Days and Times	
Classroom	
Instructor	Peter Staab
Phone	x4857
Email	pstaab@fitchburgstate.edu
Office	Department of Mathematics, Edgerly Hall, Room 310A
Office Hours	

Course Description

This course is designed for seniors in mathematics to develop and complete a research project. They will meet regularly with the instructor to provide consultation with their project and work in conjunction with other students as needed. Since the topic for each student's project will be selected by the student, the topics of the course will vary depending on the enrolled students. Each student will do a survey of the literature, define a problem statement, and develop a strategy for completion of the project.

What is this class all about?

This course is designed for seniors in applied mathematics to complete the student's senior project. They will meet regularly with the instructor to provide consultation with their project and work in conjunction with other students as needed. Since the topic for each student's project will be selected by the student, the topics of the course will vary depending on the enrolled students. Each student will do a survey of the literature, define a problem statement, and develop a strategy for completion of the project.

Prerequisites: MATH 3350 and one 4000-level Math course

What are the goals of this course?

The overall goal of this course is to produce a high-quality research project and paper. To achieve this some subgoals are

- To improve and refine your technical writing skills
- To introduce you to research in a subfield chosen by you, the student,
- To help you ask and answer the right questions in exploring your project
- To help you in giving an oral presentation at the end of the course.

My goals in the course:

- Help you in reading technical mathematical papers.
- Help you research a topic
- Help you to continue developing your mathematical skills and technical writing skills.
- Excite you mathematics and applications

How will you and I meet these goals?

It will take both you and me and your classmates to have a successful course. I want you to thrive and succeed in this course and others and hope I can do my best to help you. Of course everything involved in this course will help you do this.

Attendance

It's important to come to class to be a part of the classroom community as we discuss the material, ask questions and listen to others ask questions. Often you will work with others to understand Numerical Analysis. If you don't come to class you will miss out on much of this. In terms of a numerical value of missing class, you won't directly be losing points, but I'm sure indirectly it will.

Writing Assignments

Throughout the first few weeks of the semester, we will be working on our technical writing skills. There will be short writing assignments to enhance these skills.

Project Drafts

There will be a number of drafts of your project during the semester. I will post what is due and when in class and on Blackboard. Your grade on the drafts will be 40% of your final grade and based on timeliness of reaching the deadlines as well as progression on the drafts. I will have a drafts back to you within a week with feedback so you can make corrections.

A good paper takes many drafts to get a high quality paper at the end. This is true of writing in general and not just in this class.

Final Project

As mentioned above the goal of this class is to have a substantial research project written up and presented by the end of the course. We will spend most of the semester working toward this goal. Just so we don't cram the project into the end of the course, there are a number of deadlines for the project:

- Choose a project topic by September 15th.
- Have a draft of a literature review by October 6th
- Have a draft of the Method section of the project by October 22nd
- Have a draft of the entire paper by November 27th.
- The paper will be due on December 15th.

The final copy of the paper will be 40% of your final grade.

A rubric for the paper will be given toward the beginning of the semester in order to know what to expect for the paper. Additionally, example papers will be shown.

Presentation of Final Project

During the final exam on we will have presentations of the final project in lieu of a final exam. More details about the presentation will be given in class toward the end of the semester. You should expect to present about 20 minutes and take about 5 minutes of questions. A rubric for grading the presentation will be given out in class before the final date.

The presentation of your project will be 20% of your final grade.

Additional Course Information

Of course there's some additional details about the course that I need to include.

Textbook

There is no formal textbook for the course. You are expected to find academic papers and texts at the library. We will have a library class early in the semester.

Software

It is expected that you will be using some software to help you in the course. You should have knowledge of Matlab, however, other software may be used instead.

Grading

Your final percent will be determined by the above weighting, rounded to the nearest integer, then you will receive a grade according to the following table.

FSU Grade	Letter Equiv.	Final Score Range
4.0	A	95 – 100
3.7	A-	92 – 94
3.5	A-/B+	89 – 91
3.3	B+	86 – 88
3.0	B	83 – 85
2.7	B-	80 – 82
2.5	B-/C+	77 – 79
2.3	C+	74 – 76
2.0	C	71 – 73
1.7	C-	69 – 70
1.5	C-/D+	67 – 68
1.3	D+	64 – 66
1.0	D	60 – 63
0.0	F	0 – 59

Academic Integrity

It is assumed that all work handed in will be your own. As mentioned above you may work with others on your homework, but all homework should be written solely by you. Also mentioned above you may work with others and turn in a single project for the two projects for the course. All of this work should be done solely by you and your group members and you should cite all reference in full. There is more information on this on the project handouts. Any violation of this will result in procedure's listed in the College's Academic Dishonesty Policy (see the catalog for more information).

Disabilities Services Statement

Fitchburg State University encourages the full participation of individuals with disabilities in all aspects of campus living and learning.

To support access and inclusion, Fitchburg State offers reasonable accommodations to students who have documented disabilities (e.g. physical, learning, psychiatric, sensory, etc.). If you require accommodations for this class, please provide me with a copy of your Accommodation Agreement as soon as possible so that we can discuss your specific needs. Any information that you share with me will be held in the strictest confidence, unless you give me permission to do otherwise.

If you require academic accommodations but do not have an Accommodation Agreement, please contact Disability Services as soon as possible to establish your eligibility for services. For more information, or to schedule an appointment, please call 978.665.4020 (voice/relay) Disability Services is located in the Academic Support Center on the third floor of the Hammond building.

Electronic Devices

The Department of Mathematics Policy prohibits the use of cell phones, pagers, other electronic equipment, or graphing calculators on examinations in any mathematics course unless allowed by the instructor.