Program Change Request

Approval Path

1. 12/17/18 5:44 pm
   Barry D Vanveen (bvanveen): Approved for ELEC C EGR Dept. Approver
2. 12/19/18 3:36 pm
   Megan L Schreiber (mlpaulson): Approved for EGR College Admin Reviewer
3. 12/19/18 5:53 pm
   James P Blanchard (jpblanch): Approved for EGR College Approver
4. 01/02/19 2:38 pm
   Melissa Rose Schultz (mrschultz3): Rollback to ELEC C EGR Dept. Approver for APIR Admin
5. 01/03/19 10:48 am
   Melissa Rose Schultz (mrschultz3): Approved for ELEC C EGR Dept. Approver
6. 01/03/19 3:06 pm
   Megan L Schreiber (mlpaulson): Approved for EGR College Admin Reviewer
7. 01/04/19 8:58 am
   James P Blanchard (jpblanch): Approved for EGR College Approver
8. 01/04/19 8:59 am
   Nicole Wiessinger (wiessinger): Approved for APIR Admin

New Program Proposal

Date Submitted: 12/17/18 5:34 pm

Viewing: Research
Parent Plan: MAJ: Electrical Engineering MS

Last edit: 01/04/19 9:51 am
Changes proposed by: kfawaz

Name of the school or college academic planner who you consulted with on this proposal.

<table>
<thead>
<tr>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parmesh Ramanathan - RGE</td>
</tr>
</tbody>
</table>

Proposal Abstract/Summary:

This will be a pooled tuition program for a Master of Science in Electrical Engineering. The purpose of the named option is to provide a Master of Science program that is research-based either through a thesis or a project. This option replaces the traditional degree obtained by graduate students in ECE completing the Research or Project track. Each student is required to have a research adviser and is required to participate in some form of independent research as part of the program. The purpose of the program is to prepare students for the PhD program or for research jobs in industry and the national labs.
Basic Information

Type of Program:
Named Option

Parent Program:
MAJ: Electrical Engineering MS

Parent Audience:
Graduate or professional

Parent Home Department:
ELEC C EGR

Parent School/College:
College of Engineering

The program will be governed by the home department/academic unit as specified. Will an additional coordinating or oversight committee be established for the program?

No

Parent is in the Graduate School:
Yes

SIS Code:

SIS Description:

Transcript Title:
Research

Named Options:
POWER: Power Engineering
SPML: Signal Process & Machine Learn
382MSPROF: Professional
Sub Plan 1035: No Title Found

Does the parent program offer this as an additional major as well?
No

Roles by Responsibility: List one person for each role in the drop down list. Use the green + to create additional boxes.

<table>
<thead>
<tr>
<th>Role Type</th>
<th>Name (Last, First)</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department Chair</td>
<td>Hagness, Susan C</td>
<td><a href="mailto:schagness@wisc.edu">schagness@wisc.edu</a></td>
</tr>
</tbody>
</table>
List the departments that have a vested interest in this proposal.

Are all program reviews in the home academic unit up to date?
Yes

Are all assessment plans in the home academic unit up to date?
Yes

Are all assessment reports in the home academic unit up to date?
Yes

Mode of Delivery:
Face-to-Face (majority face-to-face courses)

Will this program be part of a consortial or collaborative arrangement with another college or university?
No

Will instruction take place at a location geographically separate from UW-Madison?
No

Parent has outside accreditation:
No

Graduates of parent program seek licensure or certification after graduation.
No

First term of student enrollment:
Fall 2019 (1202)

When will the application for the first term of enrollment open?
Fall 2019 (1202)

Which terms will you allow new students to enroll? What are the application deadlines for each term selected?

<table>
<thead>
<tr>
<th>Start Term</th>
<th>Application Deadline MM/DD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>12/15</td>
</tr>
</tbody>
</table>

Year of three year check-in to GFEC (3 years after first student enrollment):

2023
Year of first program review (5 years after first student enrollment):

2025

If this proposal is approved, describe the implementation plan and timeline.

This is the existing traditional research MS moved under a named option, therefore there is little to implement. However, to avoid confusion, the application for this option will not be implemented while an application for the same term is active for the traditional plan.

**Rationale and Justifications**

How does the named option relate to the major and to other named options in the major, if relevant?

Currently, the ECE department offers four Master of Science Programs in Electrical Engineering: the research-focused traditional MS, Signal Processing and Machine Learning (SPML), Professional, and Power Engineering Online. The SPML and Professional are course-only and non-pooled named options. They intend to serve students who are interested in professional development. On the other hand, this proposal aims to replace our current traditional and research-focused MS program with a research named option. Because the degree requires research, students choose a research adviser and typically finish in no less than 3 semesters (typically 2 years). This degree serves students who are focused on obtaining a research-based job or continue for the Ph.D. When implemented, all of our MS programs will be offered as named options: research, professional, SPML, and power online.

Why is the program being proposed? What is its purpose?

The purpose of the named option is to provide a Master of Science – Electrical Engineering program that is research-based. EE and CMPE undergraduates must take a wide breadth of classes. This option allows these students to focus at an advanced level on a particular area of Electrical Engineering and carry out independent research under the supervision of a faculty adviser in order to prepare themselves for further study in a PhD program or for research-related positions. The named option contributes significantly to the mission of the Department of Electrical and Computer Engineering by enhancing the reputation of the Department and the College nationally and internationally. The addition of the named option Research clarifies the role of this option relative to other named option alternatives available to students.

Do current students need or want the program? Provide evidence.

Approximately 50% of the students enrolled in our traditional masters program would fall into this category of a Research Named Option.

What is the market, workforce, and industry need for this program? Provide evidence.
There has been considerable demand each year for the research-based MS, this named option would take-up that demand.

What gap in the program array is it intended to fill?

This named option will provide differentiation for the traditional research-based master’s degree by providing a subplan label "Research".

## Faculty and Staff Resources

List the core program faculty and staff with title and departmental affiliation(s) who are primarily involved and will participate in the delivery and oversight.

<table>
<thead>
<tr>
<th>Name (Last, First)</th>
<th>Department</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vanveen, Barry D</td>
<td>Electrical and Computer Engr (ELEC C EGR)</td>
<td>Professor</td>
</tr>
</tbody>
</table>

What resources are available to support faculty, staff, labs, equipment, etc. ?

The current advising structure is adequate for this program – we are not anticipating adding students in a major way.

Program advisor(s) with title and departmental affiliation(s).

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</table>

Describe how student services and advising will be supported.

Existing student services and advising will be utilized through the traditional pooled 101 funding.

Confirm that the program advisor(s) or coordinator(s) have been consulted and reviewed this proposal.
Yes

## Resources, Budget, and Finance

Is this a revenue program?
No

What is the tuition structure for this program?
Standard resident/MN/nonresident graduate tuition

Does the program or change require substantial new resources other than those just described? Describe the needs. Confirm that the dean is committed to providing the resources.
There will be no change relative to how the program is funded now.

Are new Library resources needed to support this program?

No

Describe plans for funding students including but not limited to funding sources and how funding decisions are made.

Students are typically funded through either teaching assistantships or research-funded research assistantships.

**Curriculum and Requirements**

Parent Plan Admissions/How To Get In Requirements

Guide Admissions/How to Get In tab

Describe plans for recruiting students to this program.

n/a

Projected Annual Enrollment:

Maximum enrollment that can be supported with existing instructional and student services resources:

Those who are not familiar with using the html editor fields may upload a document with information about the curriculum for use by those who will format and edit the content that will appear in the Guide.

Parent Requirements

Guide Requirements tab

Total credits required:

30

Parent Plan Graduate Policies

Guide Graduate Policies tab
Discuss expected progress to degree and time to degree. For undergraduate programs discuss considerations for supporting students to complete the degree in four academic years.

**Program Learning Outcomes and Assessment**

Parent Program Learning Outcomes
- Demonstrate a strong understanding of mathematical, scientific, and engineering principles in the field.
- Demonstrate an ability to formulate, analyze, and solve advanced engineering problems.
- Demonstrate creative, independent problem solving skills.
- Apply the latest scientific and technological advancements, advanced techniques, and modern engineering tools to these problems.
- Recognize and apply principles of ethical and professional conduct.

Summarize the assessment plan.

Method for assessing learning (at least one direct method required): Each student is assessed by their adviser based on their thesis or project report.

Timetable for assessment activity (at least one activity each year; all goals reviewed in a 3-year cycle): All learning goals will be evaluated annually.

**Commitments**

All required courses are approved through the school/college level.

Yes

Courses are offered on a regular basis to allow timely completion.

Yes

Courses have enrollment capacity.

Yes

Students may complete only 1 named option within a plan code.

Yes

The program faculty/staff will ensure the program website, Advance Your Career materials if applicable, and other presentations are consistent with the Guide information for this program.

Yes
Credential will not be awarded retroactively to students who completed all of the requirements before the credential was approved.

Yes

**Supporting Information**

List name and department of those who are in support of this proposal.

If those supporting the proposal provided a letter or email of support upload here. A letter is NOT required. Upload any other explanatory information about support from other UW-Madison units.

Additional Information:

**Approvals**

*Department Approval* - This proposal has been approved by the faculty at the department/academic unit level. The program faculty confirm that the unit has the capacity and resources (financial, physical, instructional, and administrative) to meet the responsibilities associated with offering the program, including offering the necessary courses, advising students, maintaining accurate information about the program in the Guide and elsewhere, conducting student learning assessment and program review, and otherwise attend to all responsibilities related to offering this program.

Enter any notes about approval here:
Changing the name of the traditional MS to a "Research" named option was approved at the March 14, 2018 ECE Faculty Meeting. The ECE Graduate Curriculum Committee approved the form language above in December 3, 2018.

Entered by:
Barry Van Veen
Date entered: 12/17/2018

*School/College Approval* - This proposal has been approved at the school/college level and it is submitted with the Dean’s support. The Dean and program faculty confirm that the unit has the capacity and resources (financial, physical, instructional, and administrative) to meet the responsibilities associated with offering the program, including offering the necessary courses, advising students, maintaining accurate information about the program in the Guide and elsewhere, conducting student learning assessment and program review, and otherwise attend to all responsibilities related to offering this program.

Enter any notes about approval here:
At the Dec 19 meeting of the College of Engineering APC, the group unanimously recommended approval of the Electrical Engineering MS program name change to ECE MS: Research.

Entered by and date:
James Blanchard
Date entered: 12/19/2018

*GFEC Approval* - This proposal has been approved by the Graduate Faculty Executive Committee and the Dean of the Graduate School.
UAPC Approval - This proposal has been approved by the University Academic Planning Council and the Provost.

Enter any notes about the approval here:

Entered by:

Date entered:

Reviewer Comments
Melissa Rose Schultz (mrschultz3) (01/02/19 2:38 pm): Rollback: Hi Megan- Can you review the requirements and connect courses so they are tied to the course draw? This should be ready to publish in Guide. Can you work with a graduate editor if appropriate?

Key: 1035