This course proposal form should be completed when introducing a new course or a revision of an existing course. The proposal will be reviewed by the Committee on Curriculum, or, in the case of minor revisions, will be approved administratively by the Associate Provost for Instruction.

**This Course Proposal must be completed according to the guidelines provided in Course Proposal Form – Instructions and Guidance. Please see the last page of Course Proposal Form – Instructions and Guidance, for instructions on how this Course Proposal should be submitted to the Committee on Curriculum for review.**

**Date: August 28, 2017**

**1. Course Information:**

1.1 Course Prefix and Number: RMS 587  
Course Title: Renewable Materials for Sustainable Construction  
(If a new or renumbered course, please check with the Registrar regarding the use or reuse of the course number)

1.2 □ This is a New Course.  
OR  
□ This is a Major Course Revision  
OR  
☒ This is a Minor Course Revision

If this is a Course Revision, please see Course Proposal Form – Instructions and Guidance to determine if your revision is major or minor. Indicate below the reason(s) for the revision.

(Please check all that apply)

☒ Course Number/Division  
□ Title  
□ Credit hours  
□ Pre- or Co-requisite(s)  
□ Format  
□ Learning Outcomes  
□ Concepts, Content  
□ Catalog Description  
□ Instructional Methods  
□ General Education  
□ Institutional Resources  
□ Semester Offered  
□ Course Inactivation  
□ Course Reactivation

1.3 General Education knowledge and skills area (if applicable): If none, check here ☒

□ American History  
□ The Arts  
□ Basic Communication  
□ Humanities  
□ Mathematics  
□ Natural Sciences  
□ Other World Civilizations  
□ Social Sciences  
□ Western Civilization
2. Proposer Need Statement:

2.1 Describe why this course (or course revision) is needed to meet current or proposed goals and outcomes of the program or College, and, if a revision, provide an explanation of and justification for the revision.

- Converting CME prefix to RMS prefix

- This is the graduate level treatment of RMS 387. It is needed for the RMS M.S., M.P.S. and Ph.D. graduate program options in Wood Science.

- RMS graduate options in wood science have overall objectives of having students look at the broad environmental implications of the use of wood as a material, to be efficient and environmentally responsible in their use of materials, and to integrate current technology to a practicum, thesis or dissertation, as appropriate to the graduate degree.

- This course supports students in their development of knowledge and understanding of sustainable materials, renewable materials, anatomy and physical properties of woods, behavior of wood, effects of wood anatomy on the physical and mechanical properties of wood, which is important for much RMS graduate level work and research.

- Presenting this course with an RMS graduate number and title better presents our graduate program and will facilitate student recruitment and program growth

2.2 List the pre-requisite or co-requisite courses (taught within the home department or taught by another department) and explain their relationship to the proposed course. None

2.3 Explain the impact of this course in meeting the goals and outcomes of other Departments/programs (if any). None

2.4 If the proposed course is designed to fulfill SUNY General Education Requirements, the Associate Provost for Instruction must review this proposal to ensure that General Education Requirements will be met for the specified knowledge area (See Instructions and Guidance). Please provide an explanation of how this course fulfills SUNY General Education Requirements.

2.5 What are the staffing requirements (instructor, TA, Lab tech, etc.) for this course? If a new course, are there new staffing needs or are there adequate staff members already in place? If a revised course, are there additional staffing needs? Shared resource with RMS 387, Instructor and GA

2.6 What Department (or extra-Department) resources are or will be made available to support the course or course revision? Same as RMS 387, Classroom and Wood Engineering Lab

2.7 Anticipated Enrollment (enter where applicable)

<table>
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<tr>
<th>Fall Semester:</th>
<th>5</th>
<th>Spring Semester:</th>
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<td>Summer Semester:</td>
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2.8 Anticipated frequency of class meetings. Twice per week
3. DETAILED COURSE DESCRIPTION

3.1 COURSE IDENTIFICATION AND FORMAT:

3.1.1 Course Prefix and Number: RWS 587
3.1.2 Course Name: Renewable Materials for Sustainable Construction
3.1.3 Credit Hours: 3
3.1.4 Semester (check all that apply): Fall ☒ Spring ☐ Summer ☐
3.1.5 Format (check as appropriate): Lecture ☒ Online ☐ Lab ☐ Field ☐ Other ☐ (explain)
3.1.6 Contact hours per week: 3
3.1.7 Prerequisite(s) – if none, please enter “None” (Be specific, as Upper Division courses and Graduate courses will likely have some pre-requisite knowledge) None

3.2 SCOPE:

3.2.1 Level of Instruction (check one, or two if a shared resource course):
   Lower Division ☐ Upper Division ☒
   Beginning Graduate ☒ Advanced Graduate ☐

3.2.2 Relation to curriculum or to other ESF or Syracuse University courses:
   a. Is this a required course? No ☐ Yes ☒
      If Yes, please list the program(s) for which it is a requirement:
   b. Is this an elective course within your department? No ☒ Yes ☒
   c. Is enrollment in this course restricted? No ☒ Yes ☐
      If Yes, please explain:
   d. Are other ESF or SU courses similar or identical to this course? No ☒ Yes ☐
      If Yes, please identify the courses:
   e. Is this course a shared resource offering (i.e. is there a graduate or undergraduate concurrent offering)? No ☐ Yes ☒
      If Yes, what is the course number of the concurrent offering? RMS 387

3.3 STUDENT LEARNING OUTCOMES:

Identify the student learning outcomes associated with this course. 1. Describe concepts about sustainable/renewable materials used in construction

2. Identify the value of wood and other plant materials as materials for construction

3. Describe in writing why wood is particularly adapted to be a structural material that is both renewable and sustainable

4. Explain and contrast the chemical, anatomical, and physical nature of wood and major plant materials used in structural applications

5. Classify species of wood for use in specific construction applications

6. Identify 20 major species of wood used in construction using hand lens and microscope.
7. Explain why wood behaves as it does during use by consideration of the fundamentals of wood cell wall structure and the cellular organization of wood.

8. Plan for the most effective use of wood and other renewable materials as construction materials by understanding how their properties affect their use.

9. Plan for the most effective use of wood and other renewable materials as construction materials by understanding how their properties affect their use.

10. Characterize hygroscopic and dimensional change properties of 3 major softwood and 3 major hardwood species.

11. Describe necessary characteristics of potentially new renewable materials that could be utilized for sustainable construction.

3.4 MAJOR CONCEPTS, PROCESSES or TOOLS:

Identify the course content and themes (e.g. Table of Contents) consistent with the learning domains and outcomes. The use of traditional and non-traditional renewable materials in construction applications are presented with emphasis on wood. Renewable materials include wood and other botanicals that can be grown, harvested and replanted (renewed). Students will be introduced to the concept of carbon sequestration during growth of the material and how the use of wood and other botanicals relate to function. The course will consist of discussions, lectures and some demonstrations of properties of wood, bamboo, and other renewable materials and their use in construction. The student will be able to integrate the materials, their properties, uses and environmental implications of the use of such materials into a comprehensive evaluative paper.

3.5 INSTRUCTIONAL METHODS:

Identify the methods used to meet the course outcomes, as well as the principal instructional methods. Lecture, demonstrations, examinations, quizzes, in-class laboratory exercises.

Research and prepare a literature survey on a topic in renewable materials for sustainable construction and present the topic as a comprehensive paper and class presentation in the context of sustainable construction.

3.6 CATALOG DESCRIPTION:

Provide the course description using the precise format to be included in the ESF catalog (i.e. course number and title; format; brief description; semester(s) offered; and pre-/co-requisites). Please do not exceed 1000 characters. RMS 587. Renewable Materials for Sustainable Construction (3)

Three hours of discussion, lecture and demonstration per week. Properties and uses of wood and other renewable materials as a major construction materials. Identification and knowledge of the
major wood species and their applications in construction. Evaluation of current practices and materials. Fall

3.7 COURSE HISTORY:

Provide the dates of prior approval of this course, and its revision history. Submitted February 19, 2014 as a new course for the graduate program in Sustainable Construction Management and Wood Science (SCMWS). It is a shared resource course with CME 387. Submitted for prefix revision from CME to RMS August 28, 2017.

3.7.1 Relationship to current ESF courses

This course is replacing a current ESF course  ☒ YES  ☐ NO

If NO, then proceed to section 4 below.

If YES, then provide below the number and name of the course to be deactivated and removed from the catalog once this course proposal has been approved:

Course Number (of the course to be replaced)  CME 587
Course Name (of the course to be replaced)  Renewable Materials for Sustainable Construction

If the course to be replaced is used by departments other than the department sponsoring this proposal, please indicate below which departments are affected and the date they were notified about the course replacement.

Department:  Date of Notification:
Department:  Date of Notification:
Department:  Date of Notification:
Department:  Date of Notification:
4. Institutional Impacts:

This section pertains to forecasting institutional resource needs to support the course or course revision. Provide clear statements regarding the needs and current availability (or absence) of resources. Note that, if this is a course revision, only the impacts of the revision should be included.

**Staffing needs:**
Shared resource with an existing course--no additional needs

**Classroom resources (e.g. physical facilities in a laboratory, lecture hall, flexible space, academic computing):**
Lecture, projector, document camera, adjacent to Wood Products Engineering Laboratory, must be in Wood ID Lab., Room 159 Baker

**Technology Resources:**
None

**Computing Resources (software licensing, hardware, access):**
None

**Library Resources (subscriptions, services):**
None beyond Moon Library

**Transportation Requirements (budget, fees, fleet vehicles):**
None

**Forest Properties or Field Practicum Facilities:**
None
5. Health and Safety Considerations:

Will any of the conditions or situations outlined below be present in association with the course? Yes / No

5.1. Will substances with any of the following properties be used during instruction: flammability, toxicity, corrosivity, reactivity, registered pesticide, legally controlled, or other characteristics with the potential to cause harm or injury? ☐ / ☒

5.2. Will any physical hazards be present during instruction? (e.g., machines that need safety guards; razor blades or syringes; compressed gases, etc.). ☒ / ☐

5.3. Will any biological hazards be present during instruction? (e.g., handling animals (rabies or hantavirus); cultures or stocks of infectious agents (fungal spores, viruses, bacteria, etc.). ☐ / ☒

5.4. Will any radiation hazards be present during instruction? (e.g., radioisotopes, X-rays, ultraviolet rays, lasers, etc.). ☐ / ☒

5.5. Will any electrical equipment that, due to its design, location, or method of use, pose any threat to safety during instruction? (Give considerable thought to electrical use outdoors, or any potentially wet location.). ☐ / ☒

5.6. Will there be any personal safety issues related to the class? (e.g., due to time of day or location, at the end of any organized class exercise, will students be in danger of physical assault, etc.). ☐ / ☒

5.7. Will any students be driving official state or research sponsored land or water vehicles during any class or instructional exercise? ☐ / ☒

5.8. Will any type of personal protective equipment be necessary during class exercises? (e.g., hard-hats, eye/face protection, hearing protection, hand/foot protection, lab coat, visibility clothing, etc.) ☒ / ☐

If the answer was “Yes” to any of the HEALTH AND SAFETY questions, please explain: Demonstrations of wood testing will use testing equipment equipped with guards; students will be provided with safety glasses.

For lab and field courses to which all answers are “no”, you should explain that here, also. Normally, we would expect some safety precautions for such courses.
6. Coordination and Consultation

Emails/letters, as noted below and attached to this proposal, or signatures below, indicate that the affected departments, programs or units have been notified of this proposal and have had an opportunity to assess the impact of the proposal on their respective units.

**Affected Academic Department(s) or Program(s) – other than the sponsoring department:**

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<tr>
<th>Department/Program 1</th>
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<th>Name of Chair/Program Director</th>
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(if more than three Departments/Programs, please continue on a separate page)

**Other Units:**

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<tr>
<th>Associate Provost for Instruction &amp; Dean of the Graduate School (for Gen Ed courses only)</th>
<th>Date</th>
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7. Proposer Information and Sponsoring Department Chair Affirmation:

Contact Person:
Name: Robert Meyer
Department: PBE
Email: rwmeyer@esf.edu
Phone: 6838

This proposal has been reviewed and approved by the sponsoring Department. Affected departments have been notified and given the opportunity to provide feedback. Department resources are or will be made available to support the course, or a plan is in place to meet the resource needs as identified in the Institutional Impacts section of this proposal (see Section 4, above).

Name: Gary M. Scott
Date: ____________________________
Department Chair (or designated curriculum representative)
Signature: ____________________________ Or letter attached □
Department Chair (or designated curriculum representative)

8. Approvals:

__________________________________________ Date
Curriculum Committee

__________________________________________ Date
Faculty Governance

__________________________________________ Date
Provost