Renewable Materials Degree Program

Undergraduate Advising Guide 2010-2011

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Renewable Materials Program
Undergraduate Advising Guide

Tom McLain,
Department Head
Are you interested in making a difference in the world? Like a hands-on career with diverse, rewarding opportunities in a challenging degree program taught by world-class faculty? Then read on to learn about Renewable Materials at OSU.

David Smith,
Faculty Advisor
My goal as the advisor in Renewable Materials is to guide and stimulate the next generation of scientists and professionals that will fashion better ways to use the world’s renewable materials to solve important problems.
Welcome:

On behalf of the faculty and students of the College of Forestry, I want to tell you how delighted that you are pursuing your professional education with us. These are exciting times for professionals working with natural resources and you could not have selected a more interesting and challenging subject to study and pursue as a career.

The College of Forestry at Oregon State University is an excellent place to study and begin your professional development. The Renewable Materials curriculum provides the special skills and knowledge needed to make a difference in a world challenged to protect the natural environment as it uses its resources to meet society’s needs. You will be studying with a faculty that is second to none, people who are first and foremost dedicated to good teaching and who also, by the way, are national and international leaders in their professional specialties.

At the national and state levels, the policies and approaches that guide the management of our public and private lands and the renewable materials they produce are being developed, debated and often applied in Oregon first. As a student, you will be an active participant in the debate because your professors are and they bring that debate into their classrooms. I know of no more exciting time to study renewable materials or a more exciting place to do so!

Our College is also an integral part of the Oregon State University community. We are part of Oregon’s only Land Grant University and Oregon’s only university-level forestry program. We therefore play an important part in campus life as a focal point for natural resources education.

We welcome you as a student in the College of Forestry and as a part of a profession dedicated to the management and use of our nation’s outstanding forest resources and other renewable materials.

Sincerely yours,

Hal Salwasser
Dean
ADVISING RIGHTS AND RESPONSIBILITIES

The College of Forestry and the Department of Wood Science and Engineering are committed to helping students succeed. A part of that help deals with identifying majors and minors, and understanding broader University rules and regulations. The Department office staff and your faculty advisor are the starting points when you have questions, but another valuable resource for University procedures, rules and regulations is the College of Forestry Student Services office.

This advising guide does not replace the need for regular term-by-term visits with your advisor. A close association with your advisor will help you make the best choices as you progress through the program. Your adviser is also an invaluable resource for discussions about options to add extra value to your education through additional coursework, minors, or additional degrees.

The advising effort is one of mutual respect and collaboration between you and your advisor. If the process is to be effective, both you and your advisor must meet certain obligations. With that in mind, below are key responsibilities shared between your advisor and you.

As an advisee, you should:

- **Understand and accept that you are ultimately responsible for your education and your own decisions.**
- Be prepared when you come to advising sessions; be active in your advising session, and ask questions when you have them.
- Understand and communicate personal values, abilities, and goals.
- Provide accurate and truthful information when being advised.
- Initiate a purposeful relationship with your advisor and make appointments when necessary or when in need of assistance.
- Keep your local address and phone number up to date in Student Online Services and utilize and **regularly check your ONID account.**
- Call to cancel appointments that cannot be kept.
- Learn and understand OSU policies, procedures, and requirements as they relate to your academic success and/or degree completion.
- Follow through on plans-of-action identified during advising sessions.
Advisors should:

- Develop a purposeful relationship with and be an advocate for their advisees.
- Inform students of the nature of the advisor/advisee relationship.
- Assist students in defining and developing expressed educational, career, and life plans.
- Provide timely and accurate educational information.
- Promote learning opportunities that will help students define or meet personal goals and plans.
- Assist students in preparing a program that is consistent with their abilities and interests.
- Monitor progress toward educational/career goals.
- Interpret and provide rationale for institutional policies, procedures and requirements.
- Inform inquiring students of campus resources and special services available to them.
- Refer students to those resources that can enhance or supplement their academic or personal experience.

While your advisor has an important role and takes that role seriously, the most important decisions are truly yours. It’s up to you to take primary responsibility for planning your individual program and for meeting academic requirements and deadlines. Advisors can provide information, but you are the one to act on that information.

Making an appointment is strongly encouraged. Make yourself aware of your advisor’s posted office hours, or phone or email to arrange an appointment.
A sustainable world requires greater use of green renewable materials and the demand for college graduates who know how to efficiently produce, market and use these materials is increasing as a result. Renewable materials are quite diverse - including wood, bamboo, straw, yard and garden debris and many other plant-based materials. Sustainably and efficiently meeting the demand for products and energy made from these materials requires innovative scientists, engineers, and business people who want to make a difference.

The **Renewable Materials** curriculum provides students with the specialized knowledge and broad skills needed for diverse, challenging careers. The OSU degree emphasizes core science and technology knowledge about plant-based renewable materials, an understanding of how business works, and strong communications skills. Students are prepared to help meet the challenges around creating environmentally sustainable materials. The program offers two options:

**Management & Marketing** provides students with the skills to manage organizations or devise new marketing strategies to compete in the global renewable materials industry. Students in this option will also earn a Business and Entrepreneurship Minor.

**Science & Engineering** has a strong technical emphasis with the flexibility to tailor your coursework for specific interests. Students work to solve problems, create efficiencies and promote intelligent use of renewable materials.

Classes in the Department of Wood Science and Engineering are small and are taught by faculty who take a personal interest in student success. Our advisor will help you navigate through your degree program and provide tips on summer and permanent jobs.
DEGREE REQUIREMENTS

Successful completion of the RM undergraduate degree program requires earning 180 credits. In addition to the University and degree program requirements, students in the College of Forestry and RM program must also meet specific requirements to graduate. Unless noted, the following apply to all undergraduate programs in the College of Forestry.

Grades of C- or better must be earned in all courses required for any option of the B.S. in Renewable Materials that have WSE, FE or FOR course designators, or approved substitutions for those courses.

S/U Grading – Students majoring in any of the College of Forestry degree programs may not take for S/U grading (Satisfactory/Unsatisfactory) any course listed as a requirement for the major, a minor or option. This includes approved substitutions. Baccalaureate core (BAC Core) courses may be taken S/U unless they are also being used to fulfill a program requirement.

Writing III (Speech) – As a College of Forestry student, COMM 111 or 114 is required to fulfill the Writing III (Speech) Baccalaureate Core requirement. COMM 111 or 114 cannot be taken as S/U grading (Satisfactory/Unsatisfactory).

Approved Work Experience – Six months of relevant work experience is required for the RM program. This is normally accomplished through two summers of internships, or employment with a business or institution active in the renewable materials arena.

A Bachelor of Science degree in Renewable Materials requires command of a broad range of technical, science, and business skills. The course curriculum is under continuous review and revision to ensure that content and learning objectives are synchronized with both employer expectations and advancements in technology and science.

Our Graduates are employed by a wide range of private and public organizations. Most will change employers several times and be expected to shoulder many different responsibilities over the course of their professional lives. After successfully completing the RM curriculum, you will possess a firm foundation of skills and knowledge on which to build your career.
# RENEWABLE MATERIALS
## CORE CURRICULUM
### REQUIRED OF ALL RM MAJORS (CREDITS)

<table>
<thead>
<tr>
<th>Year</th>
<th>Course Details</th>
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<tbody>
<tr>
<td><strong>First Year (45)</strong></td>
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<tr>
<td></td>
<td>COMM 111/114  Speech (3)</td>
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<td></td>
<td>FOR 111      Intro to Forestry (3)</td>
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<td>FOR 141      Tree and Shrub Identification (3)</td>
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<td>HHS 231      Lifetime Fitness + Activity (3)</td>
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<td>WR 121       English Composition (3)</td>
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<td>WR 214/327   Business or Technical Writing (3)</td>
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<td></td>
<td>BAC Core     Western Culture elective (3)</td>
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<td></td>
<td>Req’d Elective Lower Division RM Option Courses (21)</td>
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<tr>
<td><strong>Sophomore Year (45)</strong></td>
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<tr>
<td></td>
<td>BI 101 or 212       General Biology or BI 212 Principles of Biology (4)</td>
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<td></td>
<td>ECON 201        Introduction to Microeconomics (4)</td>
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<td></td>
<td>ECON 202        Introduction to Macroeconomics (4)</td>
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<td>WSE 210        Renewable Material Technology &amp; Utilization (4)</td>
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<td>BAC Core       Cultural Diversity elective (3)</td>
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<td></td>
<td>BAC Core       Difference Power and Discrimination elective (3)</td>
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<td>Req’d Elective Lower Division RM Option courses (23)</td>
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<td><strong>Junior Year (45)</strong></td>
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<td>WSE 321       Structure &amp; Chemistry of Renewable Materials (4)</td>
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<td>WSE 322       Phys. &amp; Mech. Prop. of Renewable Materials (4)</td>
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<td>WSE 324       Renewable Materials Lab (3)</td>
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<td>WSE 390       Global Issues in Renewable Materials (3)</td>
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<td>BAC Core      Science, Tech and Society elective (3)</td>
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<td>Req’d Elective Upper division RM Option courses (28)</td>
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<td><strong>Senior Year (45)</strong></td>
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<td>WSE 453       Global Trade in Renewable Materials (3)</td>
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<td>WSE 455       Marketing &amp; Innovation in Renewable Material (4)</td>
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<td></td>
<td>WSE 461       Manufacturing with Renewable Materials I (4)</td>
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<tr>
<td></td>
<td>WSE 462       Manufacturing with Renewable Materials II (4)</td>
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<td></td>
<td>WSE 465       Renewable Materials Manufacturing Experience (2)</td>
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<td>WSE 471       Renewable Materials in Building Construction (3)</td>
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<td>WSE 473       Bioenergy &amp; Environmental Impact (3)</td>
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<td>Req’d Elective Electives/Option Courses (26)</td>
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Marketing and Management (M&M) Option

This option is oriented toward a career in business or management. Students in this option will also earn a Business and Entrepreneurship Minor. The courses listed below are required of all RM majors pursuing the M&M Option.

- BA 211 Financial Accounting (4)
- BA 213 Managerial Accounting (4)
- BA 230 Business Law (4)
- BA 260 Introduction to Entrepreneurship (4)
- BA 351 Managing Organizations (4)
- BA 360 Introduction to Financial Management (4)
- BA 390 Marketing (4)
- CH 121 General Chemistry (5)
- CH 122 *General Chemistry (5)
- MTH 111 College Algebra (4)
- MTH 241 Calculus for Management & Social Sciences (4)
- ST 351 Introduction to Statistical Methods (4)
- ST 352 Introduction to Statistical Methods (4)
- BAC Core Physical or Biological Science with Labs (4)

A total of 24 credits must be earned from the following list of Restricted Electives:

- ANTH 488 Business and Asian Culture (3)
- AREC 352 Environmental Economics and Policy (3)
- BA 352 Managing Individual and Team Performance (4)
- BA 357 Operations Management (4)
- BA 364 Project Management (4)
- BA 396 Fundamentals of Marketing Research (4)
- BA 452 Leadership and Team Building (4)
- BA 458 Innovation and New Product Development (4)
- BA 460 Venture Management (4)
- BA 468 Technology Commercialization (4)
- BA 497 Global Marketing (4)
- BA 499 Marketing Strategy (4)
- BEE 480 Introduction to Bioproduct Engineering (3)
- COMM 446 Communication in International Conflict and Disputes (3)
- ECON 340 International Economics (4)
- GEO 330 Geography of International Development and Globalization (3)
- IE 436 Lean Manufacturing Systems Engineering (4)
- OSCA 488 Climate Change & Nat. Res. Mgt.: Insights from Scandinavia (6)
- PH 313 Energy Alternatives (3)

The M&M Option is composed 34 BAC Core credits, 57 RM Core credits, 78 Option credits, and a minimum of 11 free elective credits.
Science and Engineering (S&E) Option

This option is oriented toward a technical career, but also provides exposure to business practices and skills. A high interest and aptitude in math and science is required. This option provides the flexibility for individual students to tailor their program to earn a minor in a variety of science or other technical disciplines. The courses listed below are required of all RM majors pursuing the S&E option.

- BA 215  Money and Investment Management (4)
- BA 230  Business Law (4)
- CH 121  General Chemistry I (5)
- CH 122  General Chemistry II (5)
- CH 123  General Chemistry III (5)
- MTH 251  Differential Calculus (4)
- MTH 252  Integral Calculus (4)
- MTH 254  Vector Calculus I (4)
- PH 211  General Physics with Calculus I (4)
- PH 212  General Physics with Calculus II (4)
- PH 213  General Physics with Calculus III (4)
- ST 351  Intro to Statistical Methods I (4)
- ST 352  Intro to Statistical Methods II (4)

In addition, this option requires a minimum of 27 credits in an “approved area of concentration” which is developed through consultation with the faculty advisor. A minimum of 12 of the 27 credits must be earned in upper division courses (300 or 400 level).

The S&E Option is composed 30 BAC Core credits, 57 RM Core credits, 82 Option credits, and a minimum of 11 free elective credits.