Accelerated Master of Forestry Program

School of Forest Resources and Environmental Science

A 4+1 program for Michigan Tech Forestry students
with training allowing students to specialize in the following areas:

- Advanced Technologies
- Natural Resources Policy
- Natural Resources Business Economics
- Engineering Technology
- Comprehensive Studies for the Forestry Professional

Contacts:
Tara L. Bal, Master of Forestry Degree Program Coordinator
(Updated 10-21-2019)

Overview

The accelerated Master of Forestry is an option for Michigan Tech students to pursue. A general education option will allow for further developing skills used by professional Foresters for current Michigan Tech students with a Forestry or related degree. The standard MF degree curriculum is designed for students with undergraduate degrees from outside the School of Forest Resources and Environmental Science (SFRES) and who wish to reorient their career towards forestry; this option is accredited by the Society of American Foresters, and will continue.

The accelerated MF is for students who want to earn both a bachelor and a masters from Michigan Tech. It provides additional training and specialization beyond the Society of American Foresters accredited undergraduate major in areas relevant to the forestry profession. The maximum time to degree for students in an accelerated master’s program is 5 years from the time the student is accepted into the graduate program. Graduate students at Michigan Tech are required to register each academic year (continuous enrollment) for at least one credit from the time they enter the graduate program until they receive their degree.

In order to be formally accepted into this accelerated master’s program, students must apply to and be accepted into the Graduate School at Michigan Technological University. Applications will be reviewed by the School of Forest Resources and Environmental Science (SFRES) according to normal procedures. Admission requirements are the same as for other graduate programs in SFRES with the exception that students should have a GPA of 3.0 or higher to be admitted. This is a Michigan Tech Senate Policy regarding all accelerated programs. A student may still apply to the non-accelerated MF program if they have below a 3.0 GPA. Students can apply for admission to an accelerated master’s program from one year before graduation until their bachelor’s degree is awarded.

Students should have a cumulative GPA of 3.0 or above to be eligible to enter an accelerated master’s program. Students who are accepted to the program will not be allowed to continue in the accelerated program if their cumulative undergraduate GPA falls below 3.0, a student may apply to enter the regular MF degree program.
Students will be considered undergraduates for the purposes of financial aid, tuition, and class standing until their undergraduate degree has been awarded. Once students are awarded their undergraduate degree, they will be considered graduate students for the purposes of financial aid and tuition.

Credit Requirements

A total of 30 credits are required for the master’s degree, including six that may be applied to both the bachelor’s and master’s degree. A minimum of 152 credits must be completed for the combined bachelor’s and master’s degree programs. Ten of the remaining 24 credits may be completed while an undergraduate under senior rule, but these credits cannot be applied towards the bachelor’s degree. Prior to completion of the master’s degree, students must indicate on their master’s degree schedule which undergraduate-level courses and credits (up to a maximum of six), should be applied to both their bachelor’s and master’s degrees. These classes will be 3000 or 4000 level classes required of the undergraduate forestry major. It is anticipated that the six credits applied to both degrees will be FW4080 (Forest Finance and Economics, 3 credits) and FW4150 (Forest Resource Management, 3 credits), though other classes from the undergraduate major would also be acceptable.

This program is offered as a coursework option with a final oral exam, requiring no thesis or report. Under this option, up to 12 credits of the 30 credit total may be at the 3000 or 4000 level. The 6 credits counted for both the bachelor’s and master’s degree count towards these 12 credits if they are at the 3000 or 4000 level.

Meeting SAF Accreditation Standards

Students will work with the Program Coordinator to determine what courses are need to meet the requirements for the Graduate School, SFRES, and SAF. Programmatic courses required for the SAF accredited Master Forestry degree must be on the student’s transcript, either undergraduate or graduate, in order to satisfy requirements for the MF degree. This would include SFRES courses:

- Field Techniques, Field Methods or FERM
- Vegetation of North America or Woody Plants of North America
- Forest Ecology
- Soil Science or Applied Soil Science
- Biometrics and Vegetation Modeling, or Forest Biometrics and Modeling
- Advanced GIS or Remote Sensing
- Forest Economics and Finance or Economic Analysis of Forestry
- Natural Resources Policy
- Forest/Landscape Hydrology or Forest Biometrics and Modeling
- Forest Resource Management, Forest Management, or Integrated NR Assessment
- Timber Harvesting or Advanced Timber Harvesting

Beginning 2018/2019, all MF students must submit a Pre-Enrollment and Completion Check Form (https://www.mtu.edu/forest/graduate/professional/forestry/curriculum/) to the Program Director to ensure SAF accreditation standards are met.

Program Administration

A faculty member has been designated as the Coordinator of the Accelerated Master of Forestry program. Adjustments to the course of study are possible with approval from the Coordinator.
### Accelerated MF Required Curriculum

<table>
<thead>
<tr>
<th>Required classes</th>
<th>FW5810 – Research Methods in Natural Resources. Fall and Spring.</th>
<th>2 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FW5081 – Professionalism in Forestry. Spring.</td>
<td>1 credit</td>
</tr>
<tr>
<td></td>
<td>FW5377 - Advanced Forest &amp; Environmental Resource Management II. Fall and Spring.</td>
<td>2 credits</td>
</tr>
<tr>
<td></td>
<td>MA5701 - Statistical Methods. (or alternate from list) Fall (or Spring).</td>
<td>3 credits</td>
</tr>
<tr>
<td>Credits applied to both BS and MF degree</td>
<td>6 credits</td>
<td>Subtotal 14 credits</td>
</tr>
</tbody>
</table>

Required Courses plus one of the Specialization areas (Grand Total 30-32 credits) outlined below.

### Advanced Technologies

<table>
<thead>
<tr>
<th>Directed electives</th>
<th>Three classes in remote sensing/ geographic information systems.</th>
<th>8-12 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One additional statistics class</td>
<td>3 credits</td>
</tr>
<tr>
<td></td>
<td>One class in the area of forest biology or management</td>
<td>2-4 credits</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal 13-19 credits</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Comprehensive Studies for the Forestry Professional

<table>
<thead>
<tr>
<th>Directed electives</th>
<th>One class in economics or business related to natural resources or the environment.</th>
<th>3-4 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One class in wood products, chemistry, or engineering principles</td>
<td>2-4 credits</td>
</tr>
<tr>
<td></td>
<td>One class in natural resource policy or law.</td>
<td>3-4 credits</td>
</tr>
<tr>
<td></td>
<td>One class in forest biology or management</td>
<td>3-4 credits</td>
</tr>
<tr>
<td></td>
<td>One class in advanced GIS or spatial statistics</td>
<td>3-4 credits</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal 14-20 credits</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Engineering Technology

<table>
<thead>
<tr>
<th>Directed electives</th>
<th>Four classes in wood products, chemistry, or engineering related to environmental products, procurement, or processing OR three classes in the above plus one approved statistics or math course.</th>
<th>12 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One class in forest biology or advanced GIS if only 9 credits in first category</td>
<td>2-4 credits</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal 14-18 credits</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Natural Resources Policy

<table>
<thead>
<tr>
<th>Directed electives</th>
<th>Four classes in policy or law covering natural resources or environmental topics.</th>
<th>9-12 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>One class in forest biology, management or advanced GIS.</td>
<td>2-4 credits</td>
</tr>
<tr>
<td></td>
<td>One class in Communications, rhetoric, writing, or social surveying.</td>
<td>2-4 credits</td>
</tr>
<tr>
<td></td>
<td><strong>Subtotal 14-18 credits</strong></td>
<td></td>
</tr>
</tbody>
</table>

### Natural Resources Business Economics

<table>
<thead>
<tr>
<th>Directed electives</th>
<th>Two classes in economic or business related topics covering natural resources or environmental topics.</th>
<th>5-7 credits</th>
</tr>
</thead>
</table>
Two classes in any economic or business related topic. | 5-7 credits
---|---
One class in the area of forest biology, management or advanced GIS. | 2-4 credits
Subtotal 14-18 credits

### Sample Electives
Below are examples of courses that would meet the above requirements. See the University Course Catalog each semester for course availability, and see the Program Coordinator for approval of alternative courses that would meet the category. Up to 12 credits of 3000-4000 level courses may be used for a graduate degree. Note that many classes may have additional prerequisites.

#### Economic or business related to natural resources or environmental topics

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC 4640 or 5640 - Natural Resource Economics (3 credits) Prereq: EC 2001 or EC 3002 or FW 4080</td>
<td>EC 4650 or 5650 - Environmental Economics (3 Credits) Prereq: EC 2001 or EC 3002</td>
</tr>
<tr>
<td>SS 5310 - Ecological Economics (3 credits, on demand)</td>
<td>EC 5620 - Energy Economics (3 credits)*</td>
</tr>
<tr>
<td>FW 4170 - Consulting Forestry (2 credits summer and fall)</td>
<td>FW 5021 – Forest Certification (1 credit) – summer</td>
</tr>
</tbody>
</table>

#### Natural resource policy or law topics

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS 3630 Environmental Policy and Politics (3 credits)</td>
<td>SS 3800 Energy Technology and Policy (3 credits)</td>
</tr>
<tr>
<td>FW3760 - Human Dimensions of Natural Resources (3 credits)</td>
<td>SS 5313 - Sustainability Policy (3 credits, on demand)*</td>
</tr>
<tr>
<td>SS 5004 Survey Methods</td>
<td>SS 5XXX Water Policy, History, and Governance</td>
</tr>
<tr>
<td>FW 5180 – Ethics of Conservation and Sustainability (2 credits)</td>
<td>SS 5320 - Special Topics in Environmental Policy (3-9 credits, on demand)*</td>
</tr>
<tr>
<td>SS5301 The Policy Process</td>
<td>SS 5302 Governance and Decision Making</td>
</tr>
<tr>
<td>SS 5300 - Environmental &amp; Energy Policy (3 credits)*</td>
<td>SS 5350 - Environmental Policy Analysis (3 credits)* Prereq: SS 5300, EC 2001</td>
</tr>
<tr>
<td>SS 5318 Public Sector Management</td>
<td>SS 5635 – International Environmental Policy (3 credits, alternate years beginning 2011-2012)*</td>
</tr>
<tr>
<td>SS 5400 - Sociology and the Environment (3 credits)*</td>
<td>FW 5812 – Public Relations for Natural Resource Professionals (3 credits)</td>
</tr>
<tr>
<td>SS 5500 - Global Environmental History (3 credits)</td>
<td>SS 5550 – Global Environmental History (3 credits) alternate years beginning 2015-2016</td>
</tr>
<tr>
<td>SS 6100 - Advanced Seminar in Energy and Climate Policy (3 credits, alternate years beginning 2012-2013)*</td>
<td>SS 5150 – Natural Hazards and Human Impacts (3 credits, Summer only)</td>
</tr>
<tr>
<td></td>
<td>FW 5021 – Forest Certification (1 credit) – summer</td>
</tr>
</tbody>
</table>

#### Wood products, chemistry, or engineering principle topics

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>BL 5120 – Environmental Remediation (3</td>
<td>BE 5200 Cellular and Molecular Biology II (3</td>
</tr>
</tbody>
</table>
### Credits

- Pre-requisite BL 1020 or 1040, offered alternate years beginning 2011-2012

### Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>CEE 5233</td>
<td>Advanced Structural Timber Design</td>
<td>3</td>
<td>Pre-requisite CE 4233, offered alternate years beginning 2011-2012</td>
</tr>
<tr>
<td>CEE 5261</td>
<td>Bridge design and construction</td>
<td>3</td>
<td>Prerequisites: CE 4213 and 4223</td>
</tr>
<tr>
<td>ENVE 4505</td>
<td>Surface Water Quality Engineering</td>
<td>3</td>
<td>Prerequisite: 3501 or 3503</td>
</tr>
<tr>
<td>CEE 5350</td>
<td>Infrastructure Life Cycle Engineering</td>
<td>3</td>
<td>offered alternate years beginning 2020-2021</td>
</tr>
<tr>
<td>CEE 5665</td>
<td>Stream Restoration (3 credits)</td>
<td>3</td>
<td>Fall, Spring, Prerequisite: CE 3620</td>
</tr>
<tr>
<td>CM 5715</td>
<td>Advanced Biochemical Processes</td>
<td>3</td>
<td>Fall, Spring</td>
</tr>
<tr>
<td>CH 5130</td>
<td>Professional Development: Chemical Safety (1 credit)</td>
<td>1</td>
<td>Prerequisite: CH 3510 or 3503</td>
</tr>
<tr>
<td>CEE 5263</td>
<td>Environmental Engineering</td>
<td>3</td>
<td>offered alternate years beginning 2011-2012</td>
</tr>
<tr>
<td>ENVE 3501</td>
<td>Environmental Engineering Principles (3 credits) or ENVE 3503</td>
<td>3</td>
<td>Environmental Engineering (3 credits)*</td>
</tr>
<tr>
<td>SU 5002</td>
<td>Infrared Technology, Sensors, and Applications (1 credit, on demand)</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>FW 3097</td>
<td>Forest Biomaterials</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>CH 4610</td>
<td>Introduction to Polymer Science</td>
<td>3</td>
<td>Prerequisite: CH 1122 or (CH 1160 and CH 1161)</td>
</tr>
<tr>
<td>ENG 5510</td>
<td>Sustainable Futures I</td>
<td>3</td>
<td></td>
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</tbody>
</table>

### Advanced GIS or Remote Sensing Topics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>FW 55550</td>
<td>GIS for Resource Management (4 credits)</td>
<td></td>
<td>Prerequisite: FW 5550</td>
</tr>
<tr>
<td>FW 5554</td>
<td>GPS Field Techniques (2 credits)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FW 4540</td>
<td>Remote Sensing of the Environment (3 credits - alternate Fall semesters), FW 5541 Lab (1 credit)</td>
<td></td>
<td>FW 5555 Advanced GIS concepts and Analysis (3 credits)</td>
</tr>
<tr>
<td>FW 5556</td>
<td>GIS Project management (3 credits)</td>
<td></td>
<td>Prerequisite: FW 5550</td>
</tr>
<tr>
<td>SU 4140</td>
<td>Photogrammetry (3 credits). Prerequisite SU 2260</td>
<td></td>
<td>FW 5557 – Applied Spatial Statistics (3 credits) Pre-requisite: FW 5550</td>
</tr>
<tr>
<td>FW 5553</td>
<td>Python Programming for ArcMAP GIS (3 credits) Prerequisites: FW 5550 or 3540</td>
<td></td>
<td>FW 5084 – Data Presentation and Visualization with R (2 credits) alternate years beginning 2017-2018</td>
</tr>
<tr>
<td>FW 5580</td>
<td>UAS (Drone) Remote Sensing and Photogrammetry (4 credits) Prerequisites: MA 1032 and FW 5540 or 4540</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Forest biology or management topics.

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>FW 5368 - Forest Ecophysiology</td>
<td>FW 5130 - Forest Vegetation Dynamics</td>
</tr>
<tr>
<td>Offered alternate years beginning with the 2012-2013 academic year (2 credits)</td>
<td>Offered alternate years beginning with the 2012-2013 academic year (3 credits)</td>
</tr>
<tr>
<td>FW 5340 - Population Genetics and Applied Forest Genetics (3 credits)</td>
<td>FW 5135 - Plant Community Ecology</td>
</tr>
<tr>
<td>Offered alternate years beginning with the 2013-2014 academic year (3 credits)</td>
<td>Offered alternate years beginning with the 2013-2014 academic year (3 credits)</td>
</tr>
<tr>
<td>FW 5370 – Measuring Plants and the Environment (3 credits- alternate 2017-2018)</td>
<td>FW 5115 - Restoration Ecology</td>
</tr>
<tr>
<td>Offered alternate years beginning with the 2013-2014 academic year (3 credits)</td>
<td>Offered alternate years beginning with the 2013-2014 academic year (3 credits)</td>
</tr>
<tr>
<td>FW 5780 – Agroforestry (3 credits on demand)</td>
<td>FW 5100 – Advanced Terrestrial Ecology (3 credits)</td>
</tr>
<tr>
<td>FW 3097 – Forest Biomaterials (3 credits)</td>
<td>FW 5133 – Intensive Silviculture (3 credits) alternate years 2017-2018</td>
</tr>
<tr>
<td>FW 3098 – Adding Value to Forest Biomaterials (2 credits) alternate years beginning 2016-2017 Prereq: FW 1035</td>
<td>FW 5221- Advanced Wetlands and Global Peatlands (2 credits, alternate years beginning 2017-2018)</td>
</tr>
<tr>
<td>FW 3116 – Ethnobotany (3 credits)</td>
<td>FW 5371- Snow Hydrology (3 credits, alternate years 2018-2019)</td>
</tr>
<tr>
<td>FW 4250 – The wolves and moose of Isle Royale (2 credits) alternate years beginning 2018-2019</td>
<td>FW 5421 – Climate Change and Management in Great Lakes Forested Systems (3 credits)</td>
</tr>
<tr>
<td>BL 4030 – Molecular Biology (3 credits) Prereq: BL 1020 or 1040 and 2100 or CH 4710</td>
<td>FW 3075 – Introduction to Forest Biotechnology (3 credits)</td>
</tr>
<tr>
<td>BL 4034 – Community Ecology and Evolutionary Dynamics (3 credits) Prereq: BL 3400 and BL 3190</td>
<td>FW 4111 – Indigenous Natural Resource Management (3 credits)</td>
</tr>
<tr>
<td></td>
<td>FW 4151 – Advanced Timber Harvesting (3 credits) Prereq: FW 3150</td>
</tr>
<tr>
<td></td>
<td>FW 4300 – Wildland Fire (3 credits) Prereq: FW 3020 and 3010 or 3012</td>
</tr>
<tr>
<td></td>
<td>FW 4400 – Urban Forestry (3 credits)</td>
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</tbody>
</table>

### Communications, rhetoric, writing, or surveying topics.

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
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</thead>
<tbody>
<tr>
<td>SS 5003- Survey Methods (3 credits, fall and spring)</td>
<td>ED or FW 4850 – Environmental Education Methods (4 credits, on demand)</td>
</tr>
<tr>
<td>HU 3621 – Introduction to Journalism (3 credits, Prereq: UN 1015)</td>
<td>HU 4693 - Science Writing (3 credits, Prereq: UN 1015)</td>
</tr>
<tr>
<td>HU 3700 – Philosophy of Science (3 credits)</td>
<td>HU 4625 – Risk Communication (3 credits, spring, summer)</td>
</tr>
<tr>
<td>ED 3510 - Communicating Science I (2 credits, fall, spring, summer)</td>
<td>HU 5010 – Organizational Communication (3 credits, on demand)</td>
</tr>
<tr>
<td>HU 5011 – Technology, Culture, and Communication (3 credits, on demand)</td>
<td>FW 5812 – Public Relations for Natural Resource Professionals (3 credits)</td>
</tr>
<tr>
<td>HU 3890 – Documentary (3 credits)</td>
<td></td>
</tr>
</tbody>
</table>
Sample Curriculum for the +1 year
*after completion of undergraduate degree (assumes undergraduate SAF accredited undergraduate degree and no credits taken under senior rule).
*6 credits counted towards both degrees (3000 level or higher).

**Specialization in Comprehensive Studies for the Forestry Professional**

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA5701 - Statistical Methods (3 credits)</td>
<td>FW 5081 – Professionalism in Forestry (1 credit)</td>
</tr>
<tr>
<td>FW5810 - Research methods in natural</td>
<td>CE 3332 - Fundamentals of Construction</td>
</tr>
<tr>
<td>resources (2 credits)</td>
<td>Engineering (3 credits) fall, spring, summer</td>
</tr>
<tr>
<td>FW 55540 – Remote Sensing of the</td>
<td>FW 5377 - Advanced Forest &amp; Environmental</td>
</tr>
<tr>
<td>Environment (3 credits)</td>
<td>Resource Management II. (2 credits).</td>
</tr>
<tr>
<td>EC 5640 - Natural Resource Economics (3</td>
<td>FW 5130 - Forest Vegetation Dynamics (3 credits)</td>
</tr>
<tr>
<td>credits)</td>
<td></td>
</tr>
<tr>
<td>FW 5180 – Ethics of Conservation and</td>
<td>FW 5421 – Climate Change and Mgmt in Great</td>
</tr>
<tr>
<td>Sustainability (2 credits)</td>
<td>Lakes Forested Systems (3 credits)</td>
</tr>
</tbody>
</table>

**Total 13 credits**

**Specialization in Natural Resource Policy**

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
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</thead>
<tbody>
<tr>
<td>MA5701 - Statistical Methods (3 credits)</td>
<td>SS 5350 - Environmental Policy Analysis (3 credits)*</td>
</tr>
<tr>
<td>FW5810 - Research methods in natural</td>
<td>HU 4625 – Risk Communication (3 credits)</td>
</tr>
<tr>
<td>resources (2 credits)</td>
<td></td>
</tr>
<tr>
<td>FW 5800 - Master's Graduate Seminar (1</td>
<td>FW 5377 - Advanced Forest &amp; Environmental</td>
</tr>
<tr>
<td>credit)</td>
<td>Resource Management II. (2 credits).</td>
</tr>
<tr>
<td>FW3760 - Human Dimensions of Natural</td>
<td>FW 5556 GIS Project management (3 credits)</td>
</tr>
<tr>
<td>Resources (3 credits)</td>
<td></td>
</tr>
<tr>
<td>SS 5300 - Environmental &amp; Energy Policy</td>
<td>FW 5081 – Professionalism in Forestry (1 credit)</td>
</tr>
<tr>
<td>(3 credits)*</td>
<td></td>
</tr>
</tbody>
</table>

**Total 12 credits**

**Specialization in Natural Resources Business Economics**

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA5701 - Statistical Methods (3 credits)</td>
<td>EC 5650 - Environmental Economics (3 Credits)</td>
</tr>
<tr>
<td>FW5810 - Research methods in natural</td>
<td>Prereq: EC 2001 or EC 3002</td>
</tr>
<tr>
<td>resources (2 credits)</td>
<td>MGT 3100 - Leadership Development (3 credits)</td>
</tr>
<tr>
<td>FW 4170 – Consulting Forestry (2 credits</td>
<td>FW 5377 - Advanced Forest &amp; Environmental</td>
</tr>
<tr>
<td>– one in previous summer and one in fall)</td>
<td>Resource Management II. (2 credits).</td>
</tr>
<tr>
<td>EC 5640 - Natural Resource Economics (3</td>
<td>FW5556 GIS Project management (3 credits)</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Courses</td>
<td>Credits</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>---------</td>
</tr>
<tr>
<td>SS 5310 - Ecological Economics</td>
<td>3</td>
</tr>
<tr>
<td>FW 5180 Professionalism in Forestry</td>
<td>1</td>
</tr>
<tr>
<td>Total 13 credits</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Specialization in Engineering Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Fall</strong></td>
</tr>
<tr>
<td>MA 5701 - Statistical Methods</td>
</tr>
<tr>
<td>FW 5810 - Research methods in natural resources</td>
</tr>
<tr>
<td>ENVE 3501 - Environmental Engineering Principles</td>
</tr>
<tr>
<td>FW 3097 – Forest Biomaterials</td>
</tr>
<tr>
<td>CH 5130 – Professional Development: Chemical Safety</td>
</tr>
<tr>
<td><strong>Total 12 credits</strong></td>
</tr>
<tr>
<td><strong>Spring</strong></td>
</tr>
<tr>
<td>FW 5081- Professionalism in Forestry</td>
</tr>
<tr>
<td>CEE 5350 Infrastructure Life Cycle Engineering</td>
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<tr>
<td>FW 5377 - Advanced Forest &amp; Environmental Resource Management II.</td>
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<tr>
<td>FW 5577 – Forest Biomaterials</td>
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<tr>
<td>CEE – Environmental Monitoring and Measurement Analysis</td>
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<tr>
<th>Specialization in Advanced Technologies</th>
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<tr>
<td><strong>Fall</strong></td>
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<tr>
<td>MA 5701 - Statistical Methods</td>
</tr>
<tr>
<td>FW 5810 - Research methods in natural resources</td>
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<tr>
<td>FW 5554 - GPS Field Techniques</td>
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<tr>
<td>FW 5580 – UAS (Drone) Remote Sensing and Photogrammetry</td>
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<td><strong>Spring</strong></td>
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<tr>
<td>FW 5510 – Applied Spatial Statistics</td>
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<tr>
<td>FW 5560 - Digital Image Processing: A Remote Sensing Perspective</td>
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<td>FW 5377 - Advanced Forest &amp; Environmental Resource Management II.</td>
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<td>FW 5081 – Professionalism in Forestry</td>
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<tr>
<td>FW4545 - Map Design with GIS</td>
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