

## MODULE ENM3100: INTEGRATED RESOURCE MANAGEMENT (BALANCING NEEDS)

**Level:** Advanced

**Theme:** Management and Conservation

**Prerequisite:** None

**Module Description:** Students develop and present an integrated plan for sustainable resource development that incorporates supply side and demand side resource management.

**Module Parameters:** Access to government, industry and community organizations responsible for sustainable energy management and environmental stewardship.

**Note:** This is a summative module that requires prior knowledge of the principles of sustainable development. It should be the last module studied in a series of Energy and Mines modules.

### Curriculum and Assessment Standards

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"><li>describe basic principles of resource management</li></ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"><li>a presentation or report that provides definitions and Alberta examples of:<ul style="list-style-type: none"><li>renewable and nonrenewable resources</li><li>conservation</li><li>sustainable development</li><li>supply-side management</li><li>demand-side management</li><li>integrated resource use.</li></ul></li></ul> <p><i>Assessment Tool</i> <i>Presentations/Reports: Advanced level, ENMPRE-3</i></p> <p><i>Standard</i> <i>Achieve a minimum rating of 3 on the rating scale for Presentations/Reports</i></p>	20

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(continued)

Module Learner Expectations	Assessment Criteria and Conditions	Suggested Emphasis
<p><i>The student will:</i></p> <ul style="list-style-type: none"> <li>present a plan for the sustainable development and integrated use of an energy or mineral resource</li> </ul>	<p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> <li>developing and presenting a plan for the sustainable development and integrated use of an energy or mineral resource. Plan to address: <ul style="list-style-type: none"> <li>short- and long-term goals and objectives</li> <li>the views of relevant stakeholder groups</li> <li>a process for public involvement</li> <li>proposed management standards and guidelines</li> <li>a schedule of development activities</li> <li>a map/flow chart that identifies existing and proposed developments, processes and technologies, and supply/distribution networks</li> <li>permits, licences and/or other legal agreements that may affect the plan</li> <li>a strategy for monitoring use and resolving potential conflicts.</li> </ul> </li> </ul> <p><i>Assessment Tool</i> <i>Assessment Criteria: Developing a Resource Management Plan, ENM3100-1</i></p> <p><i>Standard</i> <i>Achieve a minimum performance rating of:</i></p> <ul style="list-style-type: none"> <li>2 in management outcomes</li> <li>3 in planning processes</li> </ul>	<p>70</p>
<ul style="list-style-type: none"> <li>explain career opportunities relevant to resource management</li> </ul>	<ul style="list-style-type: none"> <li>completing a research project on one or more career clusters in resource management.</li> </ul> <p><i>Assessment Tool</i> <i>Career Search: Advanced Level, ENMCAR-3</i></p> <p><i>Standard</i> <i>Conduct research to a standard of 3 on the rating scale</i></p>	<p>10</p>
<ul style="list-style-type: none"> <li>demonstrate basic competencies.</li> </ul>	<ul style="list-style-type: none"> <li>observations of individual effort and interpersonal interaction during the learning process.</li> </ul> <p><i>Assessment Tool</i> <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p>	<p>Integrated throughout</p>

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(continued)

Concept	Specific Learner Expectations	Notes
<p>Management Principles</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• explain sustainable development, conservation and environmental citizenship within the context of Alberta’s energy or mineral resources</li> <li>• describe principles of supply-side resource management and demand-side resource management by citing examples of each within Alberta</li> <li>• research local opportunities for consultation and public involvement in resource management decisions.</li> </ul>	<p><b>This is a summative module requiring background knowledge of development principles. <u>It should be the last module studied in a sequence of Energy and Mines modules.</u></b></p> <p>For example:</p> <ul style="list-style-type: none"> <li>• community associations</li> <li>• industry</li> <li>• local government</li> <li>• provincial departments/agencies.</li> </ul>
<p>Planning Process</p>	<ul style="list-style-type: none"> <li>• describe short- and long-term goals for the sustainable development and integrated use of an energy or mineral resource</li> <li>• identify major factors to be addressed in a resource management plan: <ul style="list-style-type: none"> <li>– the objectives of different stakeholders</li> <li>– relevant government legislation/regulations</li> <li>– an inventory of existing resources</li> <li>– appropriate development and production techniques</li> <li>– market characteristics and trends</li> <li>– applications of research and technology</li> </ul> </li> <li>• identify alternatives regarding supply-side and demand-side management, and select the preferred alternatives</li> </ul>	<p>For example:</p> <ul style="list-style-type: none"> <li>• social</li> <li>• economic</li> <li>• environmental.</li> </ul> <p>Invite resource managers from local energy/mineral industry to explain management processes and techniques.</p> <p>Survey the views of different stakeholder groups and resolve conflicts that may arise.</p> <p>For example:</p> <ul style="list-style-type: none"> <li>• recreational</li> <li>• environmental</li> <li>• industrial</li> <li>• agricultural.</li> </ul> <p>Incorporate consultation with other resource users and public involvement into the planning process.</p> <p>Interview local landowners regarding their views on resource management.</p>

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(continued)

Concept	Specific Learner Expectations	Notes
<p>Planning Process (continued)</p>	<p><i>The student should:</i></p> <ul style="list-style-type: none"> <li>• describe on permits, licences or other legal agreements that may be required</li> <li>• identify a set of actions and present the management plan; e.g.:               <ul style="list-style-type: none"> <li>– a general description of the resource and proposed developments</li> <li>– long- and short-term management objectives</li> <li>– proposed management standards and guidelines</li> <li>– a schedule of short-term development activities</li> </ul> </li> <li>• prepare a map/flow chart to accompany and elaborate upon the management plan</li> <li>• describe techniques for monitoring resource use, management outcomes and resolving potential conflicts.</li> </ul>	<p>Specific management plans will vary, but need to address some common actions.</p> <p>Maps/flow charts might illustrate:</p> <ul style="list-style-type: none"> <li>• location of resources</li> <li>• proposed development activities</li> <li>• supply and distribution networks</li> <li>• interactions with other sectors.</li> </ul>
<p>Career Opportunities</p>	<ul style="list-style-type: none"> <li>• research careers and the range of occupational opportunities in resource management; e.g.:               <ul style="list-style-type: none"> <li>– engineering</li> <li>– technical and support services</li> <li>– environmental management</li> </ul> </li> <li>• evaluate current employment opportunities based on employment statistics</li> <li>• research trends in resource management, and future career opportunities.</li> </ul>	<p>Plan for individual/group research and presentations that address:</p> <ul style="list-style-type: none"> <li>• job description</li> <li>• employment market</li> <li>• education/training</li> <li>• wage expectations.</li> </ul> <p>Contact the “Career Information Hotline” (Alberta Advanced Education and Career Development).</p> <p>See the National Occupational Profiles (NOC) in Section H: Linkages/Transitions.</p> <p>Arrange/facilitate:</p> <ul style="list-style-type: none"> <li>• information interviews</li> <li>• work study/experience</li> <li>• job shadowing.</li> </ul>