

COURSE FOR1050: MAPPING & AERIAL PHOTOS**Level:** Introductory**Theme:** Technology and Applications**Prerequisite:** None**Description:** Students interpret information from different types of maps and aerial photographs used in the forestry industry.**Parameters:** Access to forest maps and aerial photographs.**Curriculum and Assessment Standards**

| General Outcomes | Assessment Criteria and Conditions | Suggested Emphasis |
|--|---|--------------------|
| <p><i>The student will:</i></p> <ul style="list-style-type: none"> describe different types of maps and aerial photographs used in forestry | <p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> preparing and presenting a portfolio that includes: <ul style="list-style-type: none"> four or more different types of maps used in forestry, and explanations of the characteristics and applications of each a one-page report on the National Topographic Grid System and its application in providing legal land descriptions the results of research conducted on the goals and techniques of aerial photography. <p><i>Assessment Tool</i> <i>Portfolio Assessment: Maps Used in Forestry, FOR1050-1</i></p> <p><i>Standard</i> <i>Complete all portfolio components to a standard of 1 on the rating scale</i></p> | 20 |
| <ul style="list-style-type: none"> interpret and apply information from maps and aerial photographs | <ul style="list-style-type: none"> performing practical orienteering tasks that involve the use of information conveyed through maps. Tasks to include: <ul style="list-style-type: none"> orienting a map through inspection of surroundings and use of a compass obtaining bearings from a map using a compass measuring direction using a Douglas protractor given a legal land description, locating the parcel of land on a map. <p><i>Assessment Tool</i> <i>Task Checklist: Orienteering, FOR1050-2</i> <i>Lab Assessment: Outdoor Forest Experiences, FORLAB</i></p> <p><i>Standard</i> <i>Achieve a performance rating of 1 in task assessment <u>and</u> lab assessment</i></p> | 50 |

COURSE FOR1050: MAPPING & AERIAL PHOTOS (continued)

| General Outcomes | Assessment Criteria and Conditions | Suggested Emphasis |
|---|--|--|
| <p><i>The student will:</i></p> <ul style="list-style-type: none"> • demonstrate procedures used to create maps • identify careers in the forest industry relevant to mapping and aerial photography • demonstrate basic competencies. | <p><i>Assessment of student achievement should be based on:</i></p> <ul style="list-style-type: none"> • describing topography and forest cover for a given area based on information gathered from: <ul style="list-style-type: none"> – an aerial photograph and corresponding parts of a forest type map – two or more different types of aerial photographs; e.g., black and white, colour, infrared, satellite imagery. <p><i>Assessment Tool</i> <i>Knowledge/Application Assessment: Reading and Interpreting Forest Maps, FOR1050–3</i></p> <p><i>Standard</i> <i>Respond to a standard of 1 on the rating scale</i></p> <ul style="list-style-type: none"> • constructing a simple map that represents a local forested area. Map to display scale, legend, major land and forest features and topography. <p><i>Assessment Tool</i> <i>Task Checklist for Mapping, FORMAP</i></p> <p><i>Standard</i> <i>Complete applicable mapping tasks to a standard of 1 on the rating scale</i></p> <ul style="list-style-type: none"> • given current information on career opportunities in mapping and aerial photography, completing a research project on one or more related occupations. <p><i>Assessment Tool</i> <i>Career Search: Introductory Level, FORCAR–1</i></p> <p><i>Standard</i> <i>Conduct research to a standard of 1 on the rating scale</i></p> <ul style="list-style-type: none"> • observations of individual effort and interpersonal interaction during the learning process. <p><i>Assessment Tool</i> <i>Basic Competencies Reference Guide and any assessment tools noted above</i></p> | <p></p> <p>20</p> <p>10</p> <p>Integrated throughout</p> |

COURSE FOR1050: MAPPING & AERIAL PHOTOS (continued)

| Concept | Specific Outcomes | Notes |
|--|---|---|
| <p>Applications of Maps and Aerial Photographs</p> | <p><i>The student should:</i></p> <ul style="list-style-type: none"> • describe different types of maps used in forestry; e.g.: <ul style="list-style-type: none"> – base maps – topographic/contour maps – soil type maps – forest stand or type maps • describe components and applications of the National Topographic Grid System and the Western Grid Survey System • explain the purpose and techniques of aerial photography • describe applications of different types of film used in aerial photography; e.g.: <ul style="list-style-type: none"> – black and white – black and white infrared – colour – colour infrared • describe information-gathering technologies and their applications in mapping; e.g.: <ul style="list-style-type: none"> – satellite imagery – global positioning systems (GPS) – geographic information systems (GIS). | <p>Contact the Canadian Forestry Service (Natural Resources Canada) or local forest industry to request different types of maps used in forestry.</p> <p>Obtain maps and photos of locally known areas from Alberta Environmental Protection.</p> <p>See related topics and resources in the Agriculture strand (AGR3120: Soils Management 2).</p> <p>Contact industry and/or government resource persons.</p> <p>See “JFW Green Tree Trailblazer Leader Manual,” <i>Woodstravel</i>, pp. 117–216).</p> <p>Contact RADARSAT International (3851 Shell Road, Suite 200, Richmond, British Columbia) for current information regarding applications of satellite remote sensing in mapping Canada’s forest resources.</p> |

COURSE FOR1050: MAPPING & AERIAL PHOTOS (continued)

| Concept | Specific Outcomes | Notes |
|---|---|---|
| <p>Interpreting Maps and Aerial Photographs</p> | <p><i>The student should:</i></p> <ul style="list-style-type: none"> • orient forestry maps through: <ul style="list-style-type: none"> – inspection – use of a compass • identify bearings from a map using a forestry compass • calculate direction using a Douglas protractor • read and interpret maps and aerial photographs, explaining information conveyed through: <ul style="list-style-type: none"> – legend and symbols – scale – colours – contour lines • locate a specific parcel of land on a map by using its legal survey description • describe land terrain from information conveyed through maps • estimate and calculate distance and area on maps • demonstrate applications of aerial photographs in the stereoscopic viewing of topographic features • compare details of forest type maps and aerial photographs with existing ground conditions. | <p>Read and interpret maps/photos of locally known areas.</p> <p>See map interpretation activities provided in:</p> <ul style="list-style-type: none"> • <i>Orienteering, Level I</i> • <i>Orienteering, Level II.</i> <p>Develop a series of mapping activities—start with locating dots in the classroom, then markers around the school, and finally markers around a park or wooded area.</p> <p>See related topics and resources in the Agriculture strand (AGR3120: Soils Management 2).</p> <p>Consider links with the mathematics program:</p> <ul style="list-style-type: none"> • scale diagrams • ratio and proportion • estimation. <p>Discuss the theory behind stereoscopic vision and techniques used to train the eye.</p> |
| <p>Making Maps</p> | <ul style="list-style-type: none"> • construct a map that provides information about a forested area; e.g.: <ul style="list-style-type: none"> – pace/measure area to be mapped – gather information regarding land/forest features – determine map scale – prepare a legend – plot major land/forest features | <p>Create a simple topographical map of a local area.</p> |

COURSE FOR1050: MAPPING & AERIAL PHOTOS (continued)

| Concept | Specific Outcomes | Notes |
|------------------------------------|--|--|
| <p>Making Maps (continued)</p> | <p><i>The student should:</i></p> <ul style="list-style-type: none"> • explain how information from aerial photographs is used to construct two-dimensional maps • compare details of an aerial photograph with corresponding parts of a forest type map. | <p>Use aerial photographs to create a simple map.</p> <p>If time permits, create a photo mosaic by arranging consecutive aerial photographs along a flight path.</p> |
| <p>Career Opportunities</p> | <ul style="list-style-type: none"> • research potential careers and the range of occupational opportunities in mapping and aerial photography: <ul style="list-style-type: none"> – professional – technical – labour-based • describe employment statistics within one or more areas of specialization; e.g.: <ul style="list-style-type: none"> – types of careers – number of workers – employment trends • infer career opportunities and trends from employment statistics • infer impacts of technology development on employment opportunities • predict future information-gathering techniques likely to be used in the forest industry, and resulting career opportunities. | <p>Interview people employed in careers that involve mapping and aerial photography. Identify some general areas of specialization.</p> <p>Review National Occupational Profiles (NOC).</p> <p>Contact the “Career Hotline” (telephone 1-800-661-3753).</p> <p>Contact senior management people in the forest industry; also users of information-gathering technologies (e.g., GPS, GIS).</p> |

