

**SAULT COLLEGE OF APPLIED ARTS & TECHNOLOGY
SAULT STE MARIE, ON**



COURSE OUTLINE

Course Title: EQUIPMENT OPERATION & MAINTENANCE

Code No.: NRT112 **Semester:** I

**Programs: PARKS & OUTDOOR RECREATION AND
FISH & WILDLIFE TECHNICIAN**

Author: Ken Goulding

Date: 98 **Previous Outline Date:** NEW

Approved:   **2Z^^^r**
Dean, Natural Resources **Date**
Programs

Total Credits: **Prerequisite(s):**
Length of Course: **Total Credit Hours:**

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For additional information, please contact Joe Fruchter, Dean, Natural Resources Programs, (705) 759-2554, Ext 688.

EQUIPMENT OPERATION AND MAINTENANCE

Course Name

NRT112-3

Code No.

L COURSE DESCRIPTION:

This course introduces students to the 2 and 4 stroke gasoline engines, operating principles, minor troubleshooting, emergency repairs and routine maintenance. Safe operation of motorized field equipment such as ATV's, snowmobiles, chain saws, brush saws, outboard motors, water pumps, sprayers and generators will be practiced. Safe use, maintenance and repair of hand tools including axes, sandviks, saws, pulaskis and knives will be covered. Tow vehicle and trailer circle checks as well as load securing and trailer backing will be carried out. This course will also introduce students to the operation and maintenance of video and 35 mm cameras and other A/V equipment.

n, LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE :

Upon successful completion of this course, the student will demonstrate the ability to:

1. Safely use, maintain and repair various hand tools.

Elements of the Performance:

- sharpen cutting edges safely
- retrieve (clean, troubleshoot and repair) hand tools including axes, shovels, sandviks, pulaskis

This learning outcome constitutes 10% of the course grade.

Troubleshoot, maintain and operate various small engines.

Elements of the Performance:

- accurately prepare fuel mixtures
- demonstrate safe storage of fuels and lubricants
- prepare equipment for operation including routine maintenance, minor repairs and sharpening
- observe and/or operate water pumps, portable generators, brush saws, chain saws

This learning outcome constitutes 15% of the course grade.

EQUIPMENT OPERATION AND MAINTENANCE

Course Name

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Code No.

Operate, maintain and transport various types of watercraft.

Elements of the Performance:

- prepare watercraft for operation including routine maintenance and minor repairs
- load and unload watercraft from trailers and other vehicles and demonstrate proper launching procedures including backing trailers
- demonstrate and/or describe the safe use of personal watercraft, kayaks, canoes, outboard motor boats
- demonstrate proper tie-down procedures
- check, troubleshoot and repair trailer electrical systems
- perform circle checks of tow vehicle and trailer
- demonstrate proper care and maintenance of various vehicles and recreational vehicle batteries

This learning outcome constitutes 10% of the course grade.

Operate and maintain various types of audio/video equipment

Elements of the Performance:

- demonstrate proper techniques in the operation and maintenance of video and 35mm camera^
- operate, troubleshoot and maintain A/V equipment including slide projectors, overhead projectors, VCR's

This learning outcome constitutes 5% of the course grade.

TEST #1

Use and maintain other field equipment

Elements of the Performance:

- demonstrate proper operation of depth sounders, dov^oiriggers, binoculars, field scopes
- demonstrate proper use of hand-held radios and an understanding of phonetic codes

This learning outcome constitutes 5% of the course grade.

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6. Troubleshoot, maintain and operate other off-road equipment including snowmobiles, ATV's

Elements of the Performance:

- prepare equipment for operation with routine maintenance and minor repairs
- demonstrate safe operation of equipment

This learning outcome constitutes 5% of the course grade

7. Use power tools for the maintenance and repair of picnic tables, docks, signs, boardwalks and other structures.

Elements of the Performance:

- demonstrate the safe operation of portable power tools
- assess hazards, needs and determine type of repair required
- complete repairs safely using appropriate hand and power tools
- select and apply appropriate coatings and preservatives

This learning outcome constitutes 5% of the course grade

8. Set up, operate, troubleshoot and maintain vault toilets, comfort stations and water supply systems.

Elements of the Performance;

- maintain cleanliness of vault toilets and comfort stations
- perform start-up and shut-down procedures for a seasonal water supply system
- troubleshoot and perform minor plumbing and electrical repairs
- maintain water treatment equipment and ensure potability of supply

This learning outcome constitutes 5% of the course grade

9. Troubleshoot, maintain and operate turf maintenance and horticultural equipment.

Elements of the Performance:

- prepare equipment for operation and seasonal storage including lawnmowers, chippers, rototillers, grass trimmers

This learning outcome constitutes 5% of the course grade

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10. Use, maintain and repair various nets and live traps for the purpose offish and wildlife surveys and/or the relocation of nuisance animals.

Elements of the Performance:

- demonstrate proper techniques for setting nets and live traps
- observe proper fish and animal handling/transporting techniques
- perform minor maintenance and repairs on equipment

This learning outcome constitutes 5% of the course grade

TEST #2

THE REMAINING OUTCOMES ARE ACTIVITIES PERFORMED AT FIRST YEAR SHAW DAM CAMP. THE FIRST YEAR CAMP GRADE (SEE COURSE OUTLINE FOR NRT131) IS INCORPORATED IN THE EQUIPMENT, OPERATION AND MAINTENANCE FINAL GRADE AS 30% OF THE TOTAL MARK.

HI. TOPICIS

1. Safely use, maintain and repair various hand tools.
2. Troubleshoot, maintain and operate various small engines.
3. Operate, maintain and transjort various types of watercraft.
4. Operate and maintain various types of audio/video equipment.
5. Use and maintain other field equipment.
6. Troubleshoot, maintain and operate and other off-road equipment including snowmobiles, ATV's.
7. Use power tools for the maintenance and repair of picnic tables, docks, signs, boardwalks and other structures.
8. Set up, operate, troubleshoot and maintain vault toilets, comfort stations and water supply systems.
9. Troubleshoot, maintain and operate turf maintenance and horticultural equipment.
10. Use, maintain and repair various nets and live traps for the purpose offish and wildlife surveys and/or the relocation of nuisance animals.

TV, METHOD OF EVALUATION:

Students must attend and complete all activities and tests.

A passing grade is 60%.

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The following semester grades will be assigned to students in post secondary courses:

<u>Grade</u>	<u>Definition</u>	<u>Grade Point Equivalent</u>
A+	90 - 100%	4.00
A	80 - 89%	3.75
B	70 - 79%	3.00
C	60 - 69%	2.00
R (Repeat)	59% or below	0.00
CR (Credit)	Credit for diploma requirements has been awarded. Satisfactory achievement in field placement or non-graded subject areas. A temporary grade - limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course (see Policies & Procedures Manual - Deferred Grades and Make-up).	
NR	Grade not reported to Registrar's office. This is used to facilitate transcript preparation when, for extenuating circumstances, it has been impossible for the faculty member to report grades.	

To pass the course, you must.

- write tests at specified times;
- have a total average mark of 60%. If your mark is below 60%, you must re-register, pay the fee and repeat the course.

V. EQUIPMENT REQUIRED:

Hard hat, safety-toed boots, clipboard, pencils, axe, appropriate clothing (lab coat for indoors, rainwear and warm clothes for outdoors).

VI. RECOMMENDED REFERENCE MATERIAL:

Catalogues, equipment flyers, equipment manuals, SI00 Fire Manual.

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Vn. SPECIAL NOTES:

Your instructor reserves the right to modify the course as he/she deems necessary to meet the needs of students. Students with medical conditions will provide, at all times, the appropriate medication.

Special Needs

If you are a student with special needs (eg. Physical limitations, visual impairments, hearing impairments, learning disabilities), you are encouraged to discuss required accommodations with the instructor and/or contact the Special Needs Office, Room E1204, Ext. 493, 717 or 491 so that support services can be arranged for you.

Plagiarism

Students should refer to the definition of "academic dishonesty" in the "Statement of Students Rights and Responsibilities."

Students who engage in "academic dishonesty" will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course, as may be decided by the professor.

In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Advanced Standing

Students who have completed an equivalent post-secondary course should bring relevant documents to the Coordinator, Natural Resources Programs.

Retention of Course Outlines

It is the responsibility of the student to retain all course outlines for possible future use in gaining advanced standing at other post-secondary institutions.

Substitute course information is available at the Registrar's Office.

Vm. PRIOR LEARNING ASSESSMENT:

Please contact the Prior Learning Assessment Office (E2203) for further information.