

GRANDE PRAIRIE REGIONAL COLLEGE
DEPARTMENT OF SCIENCE AND TECHNOLOGY
Bachelor of Applied Forest Resource Management

Forest Engineering Principles: FO3010 (1999) (3-0-3)

Prerequisite: FO1010-Orientation to forestry
FO2370-Mensuration I

Calender Description: Design, layout and construction of forest roads and bridges, cut blocks, and logging operations. Transportation of raw materials. Environmental aspects of alteration of the forest environment. Hydraulics, power units, power transmission, equipment design and application. Compliance with regulations and constraints on private, industrial, and Crown lands. Maintenance and restoration following operations.

Course co-ordinator: Charles A. Backman
Office: J208
Phone: 539 2846
e-mail: backman@gprc.ab.ca

Lectures: Tuesday, Thursday 10:00-11:20 Room: B305

Laboratory:

Thursday 14:30-17:20 Room: M134

(Some labs have been scheduled for Fridays. At the present time this includes the September 27 lab. Tentatively the November 1 and 15 labs will be all day Friday.)

Credit hours: (3 hour lecture – 0 hour seminar – 3 hour laboratory)

Co-lecturers: Series of guest lecturers with expertise which focus on each of the major components of the course curriculum

Course objectives: Upon successful completion of the course the student will have developed the following understanding:

1. Road layout and factors impacting on it
2. Road construction and maintenance techniques
3. Maintenance and restoration of roads following operations
4. Calculation of road construction and maintenance costs
5. Design and layout of cut blocks and logging operations
6. Compliance with regulations and constraints on private, Crown, and industrial lands
7. Equipment design and manufacture.

Text:

- (1) BCIT, Road construction practices and procedures, Forest Engineering Technology Program, 1996;
- (2) BCIT, Introduction to forest harvesting methods, Forest Engineering Technology Program, 1996;
- (3) BCIT, Forest Road Deactivation, Forest Engineering Technology Program, 1997.

Other reading material:

Other reading material as assigned

Assignments are to be handed in on time. Late assignments will be accepted; but will be subjected to an automatic deduction of 10% per day that the assignment is late. Completion of all assignments and lab reports, the mid-term, and the project is necessary in order to pass the course. The final exam must be completed in order to be eligible for credit for this course. You are expected to participate in the laboratory.

| 9- POINT GRADE | PERCENTAGE/EQUIVALENT | DESIGNATION |
|----------------|-----------------------|-------------|
| 9 | 90 - 100 | |
| 8 | 80 - 89 | EXCELLENT |
| 7 | 72 - 79 | |
| 6 | 65 - 71 | GOOD |
| 5 | 57 - 64 | |
| 4 | 50 - 56 | PASS |
| 3 | 45 - 49 | FAIL |
| 2 | 26 - 44 | |
| 1 | 0 - 25 | |

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| Week 1 (September 6) | Course introduction, expectations, laboratory schedule, etc. |
| Week 2 (September 13) | Surveying instruments |
| Week 3 (September 20) | Road construction and maintenance |
| Week 4 (September 27) | Road lay-out and factors impacting on it |
| Week 5 (October 4) | Road construction and maintenance |
| Week 6 (October 11) | (Mid-Term) |
| Week 7 (October 18) | Calculation of costs for road construction |
| Week 8 (October 25) | Calculation of costs for road construction |
| Week 9 (November 1) | Design and layout of cut blocks and logging operations |
| Week 10 (November 8) | Design and layout of cut blocks and logging operations |
| Week 11 (November 15) | Regulations affecting engineering and harvesting |
| Week 12 (November 22) | Regulations affecting engineering and harvesting |
| Week 13 (November 29) | Equipment manufacture |
| Week 14 (December 5) | Review |

LABORATORY

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|-----------------------|---|
| Week 1 (September 6) | NO LAB |
| Week 2 (September 13) | Use of surveying equipment (I) |
| Week 3 (September 20) | Use of surveying equipment (II) |
| Week 4 (September 27) | Road construction/maintenance and bridges (2) |
| Week 5 (October 4) | Restoration of roads following operations |
| Week 6 (October 11) | NO LAB (Mid-Term) |
| Week 7 (October 18) | Road construction and maintenance costs |
| Week 8 (October 25) | |
| Week 9 (November 1) | Cut block layout (2) |
| Week 10 (November 8) | |

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| Week 11 (November 15) | Forest audit (2) |
| Week 12 (November 22) | |
| Week 13 (November 29) | Equipment manufacture |
| Week 14 (December 5) | Presentation |