



## DEPARTMENT OF POWER ENGINEERING

### COURSE OUTLINE – FALL 2012

#### POF 412 MATH/MECHANICS/THERMODYNAMICS – 5.5(61/0/30)

|                      |                   |                |                   |
|----------------------|-------------------|----------------|-------------------|
| <b>INSTRUCTOR:</b>   | Augustine Ebinu   | <b>PHONE:</b>  | 780-835-6692      |
| <b>OFFICE:</b>       | PS 130            | <b>E-MAIL:</b> | aebinu@GPRC.ab.ca |
| <b>OFFICE HOURS:</b> | 8:00 am – 4:30 pm |                |                   |

#### PREREQUISITE(S)/COREQUISITE:

A high school diploma including at least:

- 65% in English 20-1 or 20 -2, AND
- 65% in Math 20-1 or 20-2, AND
- 65% in any Science (Physics, Chemistry, Biology or Science) in the 20 stream, AND
- A Career Investigation (specified format)

OR

- Mature students not meeting the above requirements may request a review of their education and prior work skills by the Power Engineering Team at GPRC.

#### REQUIRED TEXT/RESOURCE MATERIALS:

- PE4A Book 1, units 1-3
  - PE4A Workbook, Book 1
  - PE3 Section 1 Chapter 1 and 3
  - PE Book 1 of Formula
- Material Suggested:
- Reeds Math for Engineers
  - PE Math and Physical Sciences Work Book

**CALENDAR DESCRIPTION:**

Review of basic mathematics. Mensuration using S.I. units. Introduction of elementary trigonometry. Basic Principles of physics and mechanics, including stress and strain, friction, force work power and energy, and power transmission. Introduction to the application of thermodynamics to power plants, designed to acquaint students with topics such as heat and temperature, thermal expansion of solids, liquids and gases, specific, sensible and latent heat, properties of steam and basic chemical and physical properties.

**CREDIT/CONTACT HOURS:**

5.5 Credits

91 Contact Hours

**DELIVERY MODE(S):**

Fairview Campus only

**OBJECTIVES (OPTIONAL):**

To ensure student is knowledgeable and competent in basic mathematics as it applies to Power Engineering.

**TRANSFERABILITY:** As per ABSA requirements

**\*\* Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions.**

**Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability**

**GRADING CRITERIA:**

| Method                       | Percentage | Minimum                             |
|------------------------------|------------|-------------------------------------|
| Course assignments/workbooks | 15%        | 50%                                 |
| CML quizzes                  | 15%        | 50%                                 |
| Unit Exams                   | 30%        | 50%                                 |
| Final Exam                   | 40%        | 50%                                 |
|                              | 100%       | 50%                                 |
|                              |            | 65% average, with no mark below 50% |

**GRANDE PRAIRIE REGIONAL COLLEGE****GRADING CONVERSION CHART**

| <b>Alpha Grade</b>   | <b>4-point Equivalent</b> | <b>Percentage Guidelines</b> | <b>Designation</b>                         |
|----------------------|---------------------------|------------------------------|--------------------------------------------|
| <b>A<sup>+</sup></b> | <b>4.0</b>                | <b>90 – 100</b>              | <b>EXCELLENT</b>                           |
| <b>A</b>             | <b>4.0</b>                | <b>85 – 89</b>               |                                            |
| <b>A<sup>-</sup></b> | <b>3.7</b>                | <b>80 – 84</b>               | <b>FIRST CLASS STANDING</b>                |
| <b>B<sup>+</sup></b> | <b>3.3</b>                | <b>77 – 79</b>               |                                            |
| <b>B</b>             | <b>3.0</b>                | <b>73 – 76</b>               | <b>GOOD</b>                                |
| <b>B<sup>-</sup></b> | <b>2.7</b>                | <b>70 – 72</b>               |                                            |
| <b>C<sup>+</sup></b> | <b>2.3</b>                | <b>67 – 69</b>               | <b>SATISFACTORY</b>                        |
| <b>C</b>             | <b>2.0</b>                | <b>63 – 66</b>               |                                            |
| <b>C<sup>-</sup></b> | <b>1.7</b>                | <b>60 – 62</b>               |                                            |
| <b>D<sup>+</sup></b> | <b>1.3</b>                | <b>55 – 59</b>               | <b>MINIMAL PASS</b>                        |
| <b>D</b>             | <b>1.0</b>                | <b>50 – 54</b>               |                                            |
| <b>F</b>             | <b>0.0</b>                | <b>0 – 49</b>                | <b>FAIL</b>                                |
| <b>WF</b>            | <b>0.0</b>                | <b>0</b>                     | <b>FAIL, withdrawal after the deadline</b> |

**EXAMINATIONS:** As per Power Engineering Student Manual

**STUDENT RESPONSIBILITIES:** As per Power Engineering Student Manual

**STATEMENT ON PLAGIARISM AND CHEATING:**

Refer to the Student Conduct section of the College Admission Guide at <http://www.gprc.ab.ca/programs/calendar/> or the College Policy on Student Misconduct: Plagiarism and Cheating at [www.gprc.ab.ca/about/administration/policies/\\*\\*](http://www.gprc.ab.ca/about/administration/policies/**)

\*\*Note: all Academic and Administrative policies are available on the same page.

**COURSE SCHEDULE/TENTATIVE TIMELINE:**

- Aug 30 - Nov. 12, 2012
- Monday - Thursday – 0830-1020
- Monday – Thursday - 1230-1430