DEPARTMENT OF POWER ENGINEERING

COURSE OUTLINE – SPRING 2014

POF301 POWER ENGINEERING, THIRD CLASS PART A1 (PE3A1) – 5.5(11-0-5)128

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OFFICE HOURS:	Houshang -as posted Augustine -as Posted		

PREREQUISITE(S)/COREQUISITE:

- Fourth Class Power Engineering Certificate of Qualification (SOPEEC or Jurisdictional)
- A High School Diploma
- English any level 30
- Math 30-1 (Pure) or 65% minimum in Math 30-2 (Applied)
- Any 30-1 level Science or 30-2 with 65% minimum
- Career Investigation Report as per specified format

  Applicants not meeting the above requirements may request a review of their education and prior work skills by contacting the Registrar's office.

REQUIRED TEXT/RESOURCE MATERIALS:

- PE3A1 Learning Materials (PanGlobal)
- PE3A1 PanGlobal Workbook
- SOPEEC approved Academic supplement

CALENDAR DESCRIPTION:

Power Engineering Third Class part A1 contains the Math and Sciences portion of the Third Class materials. In addition to Mathematics, applied Mechanics and Thermodynamics, the student will learn basic Chemistry, Corrosion Metallurgy and plant diagrams.

CREDIT/CONTACT HOURS:

Credits: 5.5
Contact Hours: 128 (11-0-5) 8 weeks

DELIVERY MODE(S):

Lectures and Labs

OBJECTIVES (OPTIONAL):

- Solve problems using algebraic operations, including equations and logarithms.
- Explain trigonometric concepts and solve problems involving trigonometry.
- Solve problems involving the areas of plane figures and the surface areas and volumes of three-dimensional objects.
- Explain concepts and solve problems involving vectors, force systems and friction.
- Explain concepts and solve problems involving velocity and acceleration, the law of Motion and work, power and energy.
- Explain concepts and solve problems involving material stresses and bending of beams.
- Explain concepts and solve problems involving simple machines and fluids.
- Explain terminology regarding heat and perform calculations regarding heat during changes of state and calorimeter tests.
- Explain concepts and perform calculations involving the thermal expansion of solids and liquids and heat transfer by conduction.
- Define properties of saturated and superheated steam and, using information from the steam tables, calculate the heat required to produce steam at various conditions; determine the equivalent and factor of evaporation for steam boilers.
- Explain the laws of perfect gases and perform calculations involving the expansion and compression of gases.
- Explain the fundamental principles in the structure, formation and interaction of chemical compounds and the importance of chemistry in industrial operations.

- Explain the production, properties and application of mechanical of metallic and non-metallic materials.
- Explain the mechanisms that cause corrosion and the methods used to monitor and control corrosion.
- Identify and interpret components of typical engineered drawings used in industry.

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:

GRANDE PRAIRIE REGIONAL COLLEGE			
GRADING CONVERSION CHART			
Alpha Grade	**4-point Equivalent**	**Percentage Guidelines**	**Designation**
A^{+}	**4.0**	**90 – 100**	**EXCELLENT**
A	**4.0**	**85 – 89**	
A^{-}	**3.7**	**80 – 84**	**FIRST CLASS STANDING**
B^{+}	**3.3**	**77 – 79**	
B	**3.0**	**73 – 76**	**GOOD**
B^{-}	**2.7**	**70 – 72**	
C^{+}	**2.3**	**67 – 69**	**SATISFACTORY**
C	**2.0**	**63 – 66**	**FAIL**
C^{-}	**1.7**	**60 – 62**	**FAIL**
D^{+}	**1.3**	**55 – 59**	**FAIL**
D	**1.0**	**50 – 54**	
F	**0.0**	**0 – 49**	**FAIL**
WF	**0.0**	**0**	**FAIL, withdrawal after the deadline**

*Students must complete all courses with no failing grades and a minimum of 67%, and attend a minimum of 80% of all classes and 100% of all labs to successfully complete the program.

EVALUATIONS: As per Power Engineering Student Manual

Method	Percentage	Minimum
Course assignments	15%	50%
CML quizzes	15%	50%
Unit Exams	30%	50%
Final Exam	40%	50%
Overall Grade	100%	67%
		67% average, with no mark below 50%

STUDENT RESPONSIBILITIES:

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/**

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

COURSE SCHEDULE/TENTATIVE TIMELINE:

8 weeks during May and June