

Administrative Master Syllabus

Course Information

Course Title	Power Generation Instrumentation
Course Prefix, Num. and Title	ELMT 2452 - Power Generation Instrumentation
Division	Technology & Business
Department	Electronics Engineering Technology
Course Type	WECM Course
Course Catalog Description	Study of the instruments and control systems used in the power generation industry including terminology, power generation variables, piping and instrumentation diagrams (P&ID), control loop diagrams and basic troubleshooting.
Pre-Requisites	CETT 1409, and INTC 1350, and PTAC 2436
Co-Requisites	Credit for or concurrent enrollment in INTC 1457 and PTAC 2436

Semester Credit Hours

Total Semester Credit Hours (SCH): Lecture Hours:	4:3:3
Lab/Other Hours	
Equated Pay Hours	4.5
Lab/Other Hours Breakdown: Lab Hours	3
Lab/Other Hours Breakdown: Clinical Hours	0
Lab/Other Hours Breakdown: Practicum Hours	0
Other Hours Breakdown	0

Approval Signatures

Title	Signature	Date
Department Head:		
Division Chair:		
VPI:		

Additional Course Information

Topical Outline: Each offering of this course must include the following topics (be sure to include information regarding lab, practicum, and clinical or other non-lecture instruction).

Lecture - 3hrs/wk

The lecture entails in-depth coverage of instrumentation and control systems used in the power generation industry; including terminology, power generating variables, piping and instrumentation diagrams (P&ID), control loop diagrams and basic troubleshooting.

Lab - 3hrs/wk

The course will feature an integrated lab depicting the function of the various instruments used in the power generation industry, including process control elements in a control loop, use of P&IDs and basic troubleshooting. Students gain hands-on experience in the area of instrumentation and control systems.

Reviews & Exams are included within lecture hours.

Course Learning Outcomes:

Learning Outcomes – Upon successful completion of this course, students will:

1. Explain the function of the various instruments used in the power generation industry.
2. Diagram and process control elements in a control loop.
3. Apply terms and symbols used in instrumentation.
4. Perform basic troubleshooting.
5. Select/utilize the correct test equipment to verify system operational parameters for problem analysis.
6. Isolate system faults and repair.
7. Demonstrate component repair and replacement techniques.
8. Analyze system/component failures and MTBF.

Methods of Assessment:

Assessment of outcomes 1, 2, 3, 4, 5, 6, 7, and 8 will be completed through periodic written quizzes, exams and hands-on laboratory exercises.

Required text(s), optional text(s) and/or materials to be supplied by the student:

Course specific text will be specified and/or industry specific student handouts will be provided for each class session. Scientific calculators are also required.

Suggested Course Maximum:

30/15

List any specific or physical requirements beyond a typical classroom required to teach the course.

Power generation industry related electrical maintenance lab. Lab will only accommodate 15 students at one time.



Course Requirements/Grading System: Describe any course specific requirements such as research papers or reading assignments and the generalized grading format for the course.

Quizzes, homework assignments, projects, and class participation: 25%

Lab and Cross Disciplinary Skills (work ethic, safety, teamwork, housekeeping, attitude): 25%

Mid-term Exam: 25%

Final Exam: 25%

Grading Scale:

90 to 100: A

80 to 89: B

70 to 79: C

60 to 69: D

0 to 59: F

Note: For the additional NUCP certificate, the student must complete the course with a minimum of 80%.

Curriculum Checklist:

- Administrative General Education Course** (from ACGM, but not in WCJC Core) – No additional documents needed.
- Administrative WCJC Core Course.** Attach the Core Curriculum Review Forms
 - Critical Thinking
 - Communication
 - Empirical & Quantitative Skills
 - Teamwork
 - Social Responsibility
 - Personal Responsibility
- WECM Course** -If needed, revise the Program SCANS Matrix and Competencies Checklist