Course Discipline Code & No: _EWA240_   Title: _Distributed Power Generation and Power Quality_   Effective Term _Fall 2009_

Division Code: _VCT_   Department Code: _JASD_   Org #: _28200_

Don't publish: ☐College Catalog   ☒Time Schedule   ☒Web Page

Reason for Submission. Check all that apply.

☒New course approval   ☐Reactivation of inactive course
☐Three-year syllabus review/Assessment report   ☐Inactivation (Submit this page only.)
☐Course change

Change information: Note all changes that are being made. Form applies only to changes noted.

☐Consultation with all departments affected by this course is required.
☐Course discipline code & number (was _____)*
   *Must submit inactivation form for previous course.
☐Course title (was _____)
☐Course description
☐Course objectives (minor changes)
☐Credit hours (credits were: _____)

☐Total Contact Hours (total contact hours were: _____)
☐Distribution of contact hours (contact hours were:
   lecture: _____ lab _____ clinical _____ other _____)
☐Pre-requisite, co-requisite, or enrollment restrictions
☐Change in Grading Method
☐Outcomes/Assessment
☐Objectives/Evaluation
☐Other _____

Rationale for course or course change. Attach course assessment report for existing courses that are being changed.

Approvals Department and divisional signatures indicate that all departments affected by the course have been consulted.

Department Review by Chairperson   ☐ New resources needed   ☐ All relevant departments consulted

Print: _Dan Welch_   Signature _N. Welch_   Date: _2/2/09_
       Faculty/Preparer

Print: _____   Signature _____   Date: _____
       Department Chair

Division Review by Dean
☐ Request for conditional approval

Recommendation ☐ Yes ☐ No   _N. Welch_   _2/2/09_
       Dean's/Administrator's Signature   Date

Curriculum Committee Review
Recommendation
☐ Tabled   ☒ Yes ☐ No _Lisa Veasey_   _3/18/09_
       Curriculum Committee Chair's Signature   Date

Vice President for Instruction Approval
Roger M. Palay   _3/19/09_
       Vice President's Signature   Date

Approval ☒ Yes ☐ No ☐ Conditional

Do not write in shaded area.
Log File _2/17/09_ Ecopy ☐ Banner _3/23_ C&A Database _3/23_ C&A Log File _3/23_ Basic skills ☐ Contact fee ☐

Please return completed form to the Office of Curriculum & Assessment and email an electronic copy to sjohn@wccnet.edu for posting on the website.

Office of Curriculum & Assessment   http://www.wccnet.edu/departments/curriculum/
Approved by Assessment Committee 10/06

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*Complete ALL sections which apply to the course, even if changes are not being made.

Course:	Course title:
EWA240	Distributed Power Generation and Power Quality

Credit hours: 2

If variable credit, give range:

_____ _ to _____ credits

Contact hours per semester:

	Student	Instructor
Lecture:	30	30
Lab:	___	___
Clinical:	___	___
Practicum:	___	___
Other:	___	___
Totals:	30	30

Are lectures, labs, or clinicals offered as separate sections?

☐ Yes - lectures, labs, or clinicals are offered in separate sections

☐ No - lectures, labs, or clinicals are offered in the same section

Grading options:

☐ P/NP (limited to clinical & practical)

☐ S/U (for courses numbered below 100)

☒ Letter grades

Prerequisites. Select one:

☒ College-level Reading & Writing

☐ Reduced Reading/Writing Scores
(Add information at Level I prerequisite)

☐ No Basic Skills Prerequisite
(College-level Reading and Writing is **not** required.)

In addition to Basic Skills in Reading/Writing:

Level I (enforced in Banner)

	Course	Grade	Test	Min. Score	Concurrent Enrollment Can be taken together)	Corequisites Must be enrolled in this class a also during the same semester)
☐ and ☐ or	_____	___	_____	___	☐	_____
☐ and ☐ or	_____	___	_____	___	☐	_____
☐ and ☐ or	_____	___	_____	___	☐	_____
					☐	

Level II (enforced by instructor on first day of class)

	Course	Grade	Test	Min. Score
☐ and ☐ or	_____	___	_____	___
☐ and ☐ or	_____	___	_____	___

Enrollment restrictions (In addition to prerequisites, if applicable.)

☐ and ☐ or Consent required

☐ and ☒ or Admission to program required
Program: IBEW 252 Apprenticeship

☐ and ☐ or Other (please specify):
_____

Please send syllabus for transfer evaluation to:
Conditionally approved courses are not sent for evaluation.
Insert course number and title you wish the course to transfer as.

☐ E.M.U. as _____

☐ U of M as _____

☐ _____ as _____

☐ _____ as _____

☐ _____ as _____

☐ _____ as _____

Course	Course title
EWA240	Distributed Power Generation and Power Quality

Course description	Students will learn basics of UPS systems, solar photovoltaic technology, and fuel cell technology as it would apply to the design, installation, inspection, and maintenance of these systems. Also studied are power quality problems that affect all buildings' distribution systems. Topics include: types of PQ problems, causes of PQ problems, locating the problems, PQ test equipment, and solving PQ problems.
State the purpose and content of the course. Please limit to <u>500</u> characters.	This course is taught at the IBEW local training center and is only open to apprentices accepted into a program.

Course outcomes	Outcomes	Assessment
List skills and knowledge students will have after taking the course.	(applicable in all sections)	Methods for determining course effectiveness
Assessment method Indicate how student achievement in each outcome will be assessed to determine student achievement for purposes of course improvement.	After successfully completing this course, the student will be able to: 1. Explain the fundamentals of distributed power generation technology 2. Identify common system components that are used in each type of power generation 3. Explain what nonlinear loads are and how they contribute harmonics to distribution systems	This course is assessed externally by the local's Joint Apprenticeship Training Committee (JATC), consisting of NECA representatives (industry) and IBEW members. The local receives feedback on needed technical updates and apprentice skill performance.

Course Objectives	Objectives	Evaluation
Indicate the objectives that support the course outcomes given above.	(applicable in all sections)	Methods for determining level of student performance of objectives
Course Evaluations Indicate how instructors will determine the degree to which each objective is met for each student.	Objectives and methods of evaluation follow the curriculum set out by the National Joint Apprentice Training Committee (NJATC).	

List all new resources needed for course, including library materials.

     All resources for the pro gram are in place at the Local 252 Training Center.

Student Materials:

List examples of types	All books and supplies provided through the IBEW Local 252 Training Center.	Estimated costs
Texts Supplemental reading Supplies Uniforms Equipment Tools Software		$ 0

Equipment/Facilities: Check all that apply. (All classrooms have overhead projectors and permanent screens.)

Check level <u>only</u> if the specified equipment is needed for <u>all</u> sections of a course.

- ☐ Level I classroom
  Permanent screen & overhead projector

- ☐ Level II classroom
  Level I equipment plus TV/VCR

- ☐ Level III classroom
  Level II equipment plus data projector, computer, faculty workstation

- ☐ Off-Campus Sites
- ☐ Testing Center
- ☐ Computer workstations/lab
- ☐ ITV
- ☐ TV/VCR
- ☐ Data projector/computer
- ☒ Other Local 252 Training Center

Assessment plan:

Learning outcomes to be assessed (list from Page 3)	Assessment tool	When assessment will take place (semester & year)	Course section(s)/other population	Number students to be assessed
1. Explain the fundamentals of distributed power generation technology 2. Identify common system components that are used in each type of power generation 3. Explain what nonlinear loads are and how they contribute harmonics to distribution systems	Contractors (employer) provide paper feedback forms for apprentice skill performance reviews. JATC contractor members provide specifications detailing technical updates.	Fall 2011 and every three years thereafter.	All	All

Scoring and analysis of assessment:

1. Indicate how the above assessment(s) will be scored and evaluated (e.g. departmentally developed rubric, external evaluation, other). Attach the rubric/scoring guide.

   Apprentice feedback forms filled out by the employing contractor.

2. Indicate the standard of success to be used for this assessment.

   The standard of success is set by the local JATC.

3. Indicate who will score and analyze the data (data must be blind-scored).

   The data is analyzed by the JATC as a committee.

4. Explain the process for using assessment data to improve the course.

   Results are initially shared with the training coordinator for the local. The training coordinator then works with appropriate instructor staff to make needed changes.