

Course Discipline Code & No: EWA170 Title: Semiconductors Effective Term Fall 2009
 Division Code: VCT Department Code: UASD 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.

<input type="checkbox"/> Consultation with all departments affected by this course is required.	<input type="checkbox"/> Total Contact Hours (total contact hours were: _____)
<input type="checkbox"/> Course discipline code & number (was _____)* *Must submit inactivation form for previous course.	<input type="checkbox"/> Distribution of contact hours (contact hours were: lecture: _____ lab _____ clinical _____ other _____)
<input type="checkbox"/> Course title (was _____)	<input type="checkbox"/> Pre-requisite, co-requisite, or enrollment restrictions
<input type="checkbox"/> Course description	<input type="checkbox"/> Change in Grading Method
<input type="checkbox"/> Course objectives (minor changes)	<input type="checkbox"/> Outcomes/Assessment
<input type="checkbox"/> Credit hours (credits were: _____)	<input type="checkbox"/> Objectives/Evaluation
	<input type="checkbox"/> 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 D. Welch Date: 2-2-09
 Faculty/Preparer

Print: _____ Signature _____ Date: _____
 Department Chair

Division Review by Dean
 Request for conditional approval

Recommendation Yes No D. Welch 2-2-09
 Dean's/Administrator's Signature Date

Curriculum Committee Review
 Recommendation Tabled Yes No Risa Veasy 3/18/09
 Curriculum Committee Chair's Signature Date

Vice President for Instruction Approval Roger M. Peleg 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.

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

Course: EWA170	Course title: Semiconductors
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Credit hours: 2 If variable credit, give range: _____ to _____ credits	Contact hours per semester: <table style="width:100%; border-collapse: collapse;"> <tr> <td></td> <td style="text-align: center; border-bottom: 1px solid black;">Student</td> <td style="text-align: center; border-bottom: 1px solid black;">Instructor</td> </tr> <tr> <td>Lecture:</td> <td style="text-align: center;">30</td> <td style="text-align: center;">30</td> </tr> <tr> <td>Lab:</td> <td style="text-align: center;">—</td> <td style="text-align: center;">—</td> </tr> <tr> <td>Clinical:</td> <td style="text-align: center;">—</td> <td style="text-align: center;">—</td> </tr> <tr> <td>Practicum:</td> <td style="text-align: center;">—</td> <td style="text-align: center;">—</td> </tr> <tr> <td>Other:</td> <td style="text-align: center;">—</td> <td style="text-align: center;">—</td> </tr> <tr> <td>Totals:</td> <td style="text-align: center;">30</td> <td style="text-align: center;">30</td> </tr> </table>		Student	Instructor	Lecture:	30	30	Lab:	—	—	Clinical:	—	—	Practicum:	—	—	Other:	—	—	Totals:	30	30	Are lectures, labs, or clinicals offered as separate sections? <input type="checkbox"/> Yes - lectures, labs, or clinicals are offered in separate sections <input type="checkbox"/> No - lectures, labs, or clinicals are offered in the same section	Grading options: <input type="checkbox"/> P/NP (limited to clinical & practical) <input type="checkbox"/> S/U (for courses numbered below 100) <input checked="" type="checkbox"/> Letter grades
	Student	Instructor																						
Lecture:	30	30																						
Lab:	—	—																						
Clinical:	—	—																						
Practicum:	—	—																						
Other:	—	—																						
Totals:	30	30																						

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 <small>(Can be taken together)</small>	Corequisites <small>Must be enrolled in this class a also during the same semester)</small>
<input type="checkbox"/> and <input type="checkbox"/> or	_____	_____	_____	_____	<input type="checkbox"/>	_____
<input type="checkbox"/> and <input type="checkbox"/> or	_____	_____	_____	_____	<input type="checkbox"/>	_____
<input type="checkbox"/> and <input type="checkbox"/> or	_____	_____	_____	_____	<input type="checkbox"/>	_____

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

	Course	Grade	Test	Min. Score
<input type="checkbox"/> and <input type="checkbox"/> or	_____	_____	_____	_____
<input type="checkbox"/> and <input type="checkbox"/> or	_____	_____	_____	_____

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

- and or Consent required
 and or Admission to program required
 and or Other (please specify):
 Program: IBEW 252 Apprenticeship

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.

- | | |
|--|---|
| <input type="checkbox"/> E.M.U. as _____ | <input type="checkbox"/> _____ as _____ |
| <input type="checkbox"/> U of M as _____ | <input type="checkbox"/> _____ as _____ |
| <input type="checkbox"/> _____ as _____ | <input type="checkbox"/> _____ as _____ |

Course EWA170	Course title Semiconductors	
Course description State the purpose and content of the course. Please limit to <u>500</u> characters.	Students are introduced to the basic theory of operation of semiconductor devices. The basics manufacture and construction of P-type and N-type semiconductor materials and the theory of the PN junction are discussed and then expanded upon with the introduction multilayer devices. This course is taught at the IBEW local training center and is only open to apprentices accepted into a program.	
Course outcomes List skills and knowledge students will have after taking the course. Assessment method Indicate how student achievement in each outcome will be assessed to determine student achievement for purposes of course improvement.	Outcomes (applicable in all sections) After successful completion of this course, the student will be able to: 1. Explain the composition of P-type and N-type semiconductor materials 2. Operate a P-N junction 3. Identify and explain various semiconductor devices 4. Discuss basics of amplifier circuits	Assessment Methods for determining course effectiveness 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 Indicate the objectives that support the course outcomes given above. Course Evaluations Indicate how instructors will determine the degree to which each objective is met for each student.	Objectives (applicable in all sections) Objectives and methods of evaluation follow the curriculum set out by the National Joint Apprentice Training Committee (NJATC).	Evaluation Methods for determining level of student performance of objectives

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 Texts Supplemental reading Supplies Uniforms Equipment Tools Software	All books and supplies provided through the IBEW Local 252 Training Center.	Estimated costs \$ 0
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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. <input type="checkbox"/> Level I classroom Permanent screen & overhead projector <input type="checkbox"/> Level II classroom Level I equipment plus TV/VCR <input type="checkbox"/> Level III classroom Level II equipment plus data projector, computer, faculty workstation	<input type="checkbox"/> Off-Campus Sites <input type="checkbox"/> Testing Center <input type="checkbox"/> Computer workstations/lab <input type="checkbox"/> ITV <input type="checkbox"/> TV/VCR <input type="checkbox"/> Data projector/computer <input checked="" type="checkbox"/> Other <u>Local 252 Training Center</u>
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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 composition of P-type and N-type semiconductor materials 2. Operate a P-N junction 3. Identify and explain various semiconductor devices 4. Discuss basics of amplifier circuits	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.