

MASTER SYLLABUS

Course Discipline Code & No: EWA210 Title: Digital Electronics and PLCs 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.

Consultation with all departments affected by this course is required.  Total Contact Hours (total contact hours were: \_\_\_\_\_)  
 Course discipline code & number (was \_\_\_\_\_)\*  Distribution of contact hours (contact hours were:  
 \*Must submit inactivation form for previous course. lecture: \_\_\_\_\_ lab \_\_\_\_\_ clinical \_\_\_\_\_ other \_\_\_\_\_)  
 Course title (was \_\_\_\_\_)  Pre-requisite, co-requisite, or enrollment restrictions  
 Course description  Change in Grading Method  
 Course objectives (minor changes)  Outcomes/Assessment  
 Credit hours (credits were: \_\_\_\_\_)  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 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 Jim Veasey 3/28/09  
 Tabled  Yes  No Curriculum Committee Chair's Signature Date

Vice President for Instruction Approval  
Roger M. Polkey 3/19/09  
 Vice President's Signature Date  
 Approval  Yes  No  Conditional

Do not write in shaded area.  
 Log File 2/17/09 Copy  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](mailto:sjohn@wccnet.edu) for posting on the website.

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

<b>Course:</b> EWA210	<b>Course title:</b> Digital Electronics and PLCs
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<b>Credit hours:</b> <u>2</u> If variable credit, give range: _____ to _____ credits	<b>Contact hours per semester:</b> <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><b>Totals:</b></td> <td style="text-align: center;"><b>30</b></td> <td style="text-align: center;"><b>30</b></td> </tr> </table>		Student	Instructor	Lecture:	30	30	Lab:	—	—	Clinical:	—	—	Practicum:	—	—	Other:	—	—	<b>Totals:</b>	<b>30</b>	<b>30</b>	<b>Are lectures, labs, or clinicals offered as separate sections?</b> <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	<b>Grading options:</b> <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:	—	—																						
<b>Totals:</b>	<b>30</b>	<b>30</b>																						

**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 _____

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<b>Course</b> EWA210	<b>Course title</b> Digital Electronics and PLCs	
<b>Course description</b> State the purpose and content of the course. Please limit to <u>500</u> characters.	This course provides knowledge of digital controls utilizing AND, OR, NAND, XOR, and XNOR logic. Students also study applications of these digital circuits in programmable logic controller installations and applications. Relay ladder logic programming language is studied to provide the student the fundamentals for entering a control program into a PLC.  This course is taught at the IBEW local training center and is only open to apprentices accepted into a program.	
<b>Course outcomes</b> List skills and knowledge students will have after taking the course.  <b>Assessment method</b> Indicate how student achievement in each outcome will be assessed to determine student achievement for purposes of course improvement.	<b>Outcomes</b> (applicable in all sections)  After successful completion of this course, the student will be able to: 1. Explain terminology and application of digital techniques 2. Apply digital techniques to installation and troubleshooting industrial controls 3. Use the language of digital electronics to allow better communication with customers	<b>Assessment</b> 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.
<b>Course Objectives</b> Indicate the objectives that support the course outcomes given above.  <b>Course Evaluations</b> Indicate how instructors will determine the degree to which each objective is met for each student.	<b>Objectives</b> (applicable in all sections)  Objectives and methods of evaluation follow the curriculum set out by the National Joint Apprentice Training Committee (NJATC).	<b>Evaluation</b> Methods for determining level of student performance of objectives

**List all new resources needed for course, including library materials.**  
All resources for the program are in place at the Local 252 Training Center.

**Student Materials:**

<b>List examples of types</b> Texts Supplemental reading Supplies Uniforms Equipment Tools Software	All books and supplies provided through the IBEW Local 252 Training Center.	<b>Estimated costs</b> \$ 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 terminology and application of digital techniques 2. Apply digital techniques to installation and troubleshooting industrial controls 3. Use the language of digital electronics to allow better communication with customers	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.