MASTER SYLLABUS

Course Discipline Code & No: __UAE210__   Title: _Advanced Electronics and DDC Systems_

Effective Term _F08_

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

☐Three-year syllabus review/Assessment report

☐Course change

☐Reactivation of inactive course

☐Inactivation (Submit this page only.)

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.

This is the first course in the new Environmental Technology associate degree program.

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: _Rod Jara_
Faculty/Preparer   Signature _____   Date: _6/27/08_

Print: _Dan Welch_
Department Chair   Signature _D. Welch_   Date: _6/27/08_

Division Review by Dean

☒ Request for conditional approval

Recommendation ☐ Yes ☐ No   _D. Welch_
Dean's/Administrator's Signature   _6/27/08_
Date

Curriculum Committee Review

Recommendation _____

☐ Tabled   ☒ Yes ☐ No   _Lisa Veasey_
Curriculum Committee Chair's Signature   _11/5/08_
Date

Vice President for Instruction Approval

Roger M. Palay
Vice President's Signature   _11/7/08_
Date

Approval ☒Yes ☐ No ☐ Conditional

Do not write in shaded area.

Log File _6/27/08_ Ecopy ☐   Banner _11/7_ C&A Database _11/1_   C&A Log File _11/7_   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.

Office of Curriculum & Assessment   http://www.wccnet.edu/departments/curriculum/

Updated 10/22/07

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

Course:	Course title:
UAE 210	Advanced Electronics & DDC Systems

Credit hours: __3__

If variable credit, give range:

_____ _ to _____ credits

Contact hours per semester:

	Student	Instructor
Lecture:	45	45
Lab:	0	—
Clinical:	___	—
Practicum:	0	—
Other:	___	—
Totals:	45	45

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 & practica)

☐ 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 lso 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   ☐ and ☐ or Other (please specify):

Program: __UA Program__   _____

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 _____   ☐ _____ as _____

☐ U of M as _____   ☐ _____ as _____

☐ _____ as _____ _____   ☐ _____ as _____

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Course	Course title
UAE 210	Advanced Electronics & DDC System

Course description	This course will present advanced control theory concepts and provide a thorough understanding of the
State the purpose and content of the course. Please limit to 500 characters.	operation of commercial controls for HVACR systems. Due to the complexity and proprietary nature of Direct Digital Control (DDC) systems, both generic and specific information on DDC systems will be introduced and studied. A basic introduction to DDC and the terms used in the industry will be followed with detailed information of DDC system architectures, hardware components and software requirements. Comprehensive specific information regarding input and output types and the processes of DDC systems will be covered.

Course outcomes	Outcomes	Assessment
List skills and knowledge students will have after taking the course.	(applicable in all sections)	Methods for determining course effectiveness
	1. Identify and explain building automation components	Student performance log
Assessment method	2. Identify energy savings opportunities and quantify expected results	Student performance log
Indicate how student achievement in each outcome will be assessed to determine student achievement for purposes of course improvement.	3. Identify and explain the inputs and outputs of DDC systems and explain the HVACR environmental results achieved	Student performance log

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
	Outcome 1:	
	- Identify components used in building automation systems	Exam consisting of multiple choice, true/false, fill in the blank, and short answer questions.
Course Evaluations	- Explain the purpose of each building automation component	Exam consisting of multiple choice, true/false, fill in the blank, and short answer questions.
Indicate how instructors will determine the degree to which each objective is met for each student.	Outcome 2	
	- Explain the principles of energy saving systems	Exam consisting of multiple choice, true/false, fill in the blank, and short answer questions.
	- Quantify the potential savings of one HVACR system over another	Exam utilizing case study examples.
	Outcome 3	
	- Identify common inputs and outputs used in a DDC system for HVACR systems control	Exam consisting of multiple choice, true/false, fill in the blank, and short answer questions.
	- Distinguish between analog and digital inputs and outputs used in HVACR systems	Exam consisting of multiple choice, true/false, fill in the blank, and short answer questions.
	- Measure the resulting changes in the environment caused by DDC system outputs	Results of online simulation assignments

List all new resources needed for course, including library materials.
Blackboard server- course will be taught online.
Customized trainers in Local 250 in Anaheim, CA- accessible online for simulations. This facility is in place.

Student Materials:

List examples of types	HVAC Control Systems	Estimated costs
Texts Supplemental reading Supplies Uniforms Equipment Tools Software	2nd Edition By: Ronnie J. Auvil	$ 100.00

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 <u>Online course- Blackboard server space</u>

Assessment plan:

Learning outcomes to be assessed (list from Page 3)	Assessment tool	When assessment will take place (semester & year)	Course section(s)/othe r population	Number students to be assessed
Identify and explain building automation components	Student performance log	Spring 2011 for students enrolled in 2008-09 year, and every three years thereafter.	All	80% of all students determined through a random sampling
Identify energy savings opportunities and quantify expected results	Student performance log	Spring 2011 for students enrolled in 2008-09 year, and every three years thereafter.	All	80% of all students determined through a random sampling
Identify and explain the inputs and outputs of DDC control systems and explain the environmental results achieved	Student performance log	Spring 2011 for students enrolled in 2008-09 year, and every three years thereafter.	All	80% of all students determined through a random sampling

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.

   Student performance log will be scored using the attached Performance Rating Rubric reflecting UA HVACR Department standards by UA HVACR faculty.

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

   85% of the students in the random sampling will score a 3 or higher on each of the activities listed on the rubric.

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

The UA Program Administrator will coordinate with the UA HVACR Department to establish review cycle dates and material for review. UA HVACR Department staff will review student ratings and make recommendations. Where student performance indicates, UA employers, program students, WCC HVACR instructors, and UA Training Department specialists may be consulted for recommendations.

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

Assessment recommendations will be shared with UAE faculty and, if appropriate, UA HVACR instructors. Changes will be made to course material as indicated by the UA HVACR and training department recommendations. Like all UA courses, additional changes will be made continually to the course material to keep up with industry practices and component changes.