

NEW COURSE PROPOSAL

Courses must be submitted by October 15, 2014, and finalized by the end of that fall semester for the next catalog production.

Use YELLOWED areas to enter data.

DATE (*Change if modified and redate file with current date*) 9/29/14, 12/03/14

PROGRAM AREA(S) ESRM

1. Course Information. *[Follow accepted catalog format.]*

Prefix(es) (Add additional prefixes if cross-listed) and **Course No.** ESRM 371

Title: COASTAL MONITORING WITH REMOTELY PILOTED SYSTEMS **Units:** 3

Prerequisites: ESRM 370 or Consent of Instructor

Corequisites: none

Consent of Instructor Required for Enrollment

Catalog Description (Do not use any symbols): Develops student skills in vehicle maneuvering, control systems, safe operations, and effective planning and budgeting. Students will focus on data collection built around data collection activity labs. Classes will typically focus on either aerial or aquatic systems. Course repeatable once.

Grading Scheme:

x A-F Grades

Credit/No Credit

Optional (Student Choice)

Repeatability:

x Repeatable for a maximum of 6 units

Total Completions Allowed 2

x Multiple Enrollment in Same Semester

Course Level Information:

x Undergraduate

Post-Baccalaureate/Credential

Graduate

Mode of Instruction/Components (*Hours per Unit are defaulted*).

	Units	Hours per Unit	Default Section Size	Graded Component	CS & HEGIS # (Filled in by the Provost's Office)
Lecture	1	1	20		
Seminar		1			
Laboratory		3			
Activity	2	2	20		
Field Studies					
Indep Study					
Other Blank					

Leave the following hours per week areas blank. The hours per week will be filled out for you.

hours lecture per week

hours blank per week

2. Course Attributes:

General Education Categories: All courses with GE category notations (including deletions) must be submitted to the GE website: <http://summit.csuci.edu/geapproval>. Upon completion, the GE Committee will forward your documents to the Curriculum Committee for further processing.

A (English Language, Communication, Critical Thinking)

A-1 Oral Communication

A-2 English Writing

A-3 Critical Thinking

B (Mathematics, Sciences & Technology)

B-1 Physical Sciences

B-2 Life Sciences – Biology

B-3 Mathematics – Mathematics and Applications

☐ B-4 Computers and Information Technology
C (Fine Arts, Literature, Languages & Cultures)

☐ C-1 Art
☐ C-2 Literature Courses
☐ C-3a Language
☐ C-3b Multicultural

D (Social Perspectives)

E (Human Psychological and Physiological Perspectives)

UDIGE/INTD Interdisciplinary

Meets University Writing Requirement (Graduation Writing Assessment Requirement)

☐ **Meets University Language Requirement**

☐ **American Institutions, Title V Section 40404:** ☐ Government ☐ US Constitution ☐ US History
Regarding Exec Order 405, for more information: <http://senate.csuci.edu/comm/curriculum/resources.htm>

☐ **Service Learning Course** (Approval from the Center for Community Engagement must be received before you can request this course attribute).

☐ **Online Course** (Answer YES if the course is ALWAYS delivered online).

x **Lab Fee Request** – Lab fee requests should be directed to the Student Fee Committee.

3. Justification and Requirements for the Course. (Make a brief statement to justify the need for the course)

A. Justification:

Following of our new introductory remotely piloted systems class (ESRM 370), it will be necessary to give students longer individual exposure times to the vehicles (up to 50 hours per vehicle to meet potential new FAA rules), control systems, and data collecting sensors to allow them to develop their confidence and abilities. This course will run as an aquatic session and as an aerial session, and may be repeated once.

While the skills developed herein are applicable across numerous settings, we are particularly focused on preparing students to use these tools in the topographically, oceanographically, and meteorologically diverse region of the Southern California Bight (the region from San Diego to Point Conception).

B. Degree Requirement: ☐ Requirement for the Major/Minor
X Elective for the Major/Minor
X Free Elective

Note: Submit Program Modification if this course changes your program.

4. Student Learning Outcomes. List in numerical order. Please refer to the Curriculum Committee's "Learning Outcomes" guideline for measurable outcomes that reflect elements of Bloom's Taxonomy: <http://senate.csuci.edu/comm/curriculum/resources.htm>. The committee recommends 4 to 8 student learning outcomes, unless governed by an external agency (e.g., Nursing).
Upon completion of the course, the student will be able to:

1. Explain when it would be safe and effective to utilize a range of Remotely Piloted Systems in the coastal zone.
2. Safely launch, maneuver, and return a Remotely Piloted System.
3. Calibrate, deploy, and use a variety of sensor packages to quantify the coastal environment.
4. Demonstrate basic navigation proficiency across an arena with obstacles and obstructions characteristic of the Southern California Bight.

5. Course Content in Outline Form. [Be as brief as possible, but use as much space as necessary]

1. Safety & Fire Suppression
2. Developing Pre-Flight and Post-Flight Checklists
3. Spare Parts, Lubricants, and Redundancy
4. Flight Logs
5. Defining Range of Operation (default & maximum)
 - a. communication
 - b. data uplinks
 - c. navigation

5. Repeated Manuvers
6. Full Auto vs. Auto Assist vs. Mission Planning
7. Case Studies
 - a. military
 - b. EMS
 - c. Cal Fire
 - d. agribusiness
 - e. pipeline inspection
 - f. film industry
 - g. coastal science
 - h. kinetic art installations
9. Documenting Flight Time

Does this course content overlap with a course offered in your academic program? Yes ☐ No ☒
 If YES, what course(s) and provide a justification of the overlap.

Does this course content overlap a course offered in another academic area? Yes ☐ No ☒
 If YES, what course(s) and provide a justification of the overlap.

Overlapping courses require Chairs' signatures.

6. Cross-listed Courses *(Please note each prefix in item No. 1) Beyond three disciplines consult with the Curriculum Committee.*

A. List Cross-listed Courses (Signature of Academic Chair(s) of the other academic area(s) is required).

List each cross-listed prefix for the course:

B. Program responsible for staffing:

7. References. *[Provide 3 - 5 references]*

Rudy, Thomas A. 2013. The Morality of Employing Remotely Piloted Weapon Systems

Fahlstrom, P. 2012. Introduction to UAV Systems

Christ, R.D. and R.L. Wernli. 2011. The ROV Manual: A User Guide for Observation Class Remotely Operated Vehicles.

8. Tenure Track Faculty Qualified to Teach This Course.

Dr. Sean Anderson

9. Requested Effective Date:

First semester offered: Spring 2016

10. New Resources Requested. Yes ☐ No ☒

If YES, list the resources needed.

A. Computer Needs (data processing, audio visual, broadcasting, other equipment, etc.)

☐ B. Library Needs (streaming media, video hosting, databases, exhibit space, etc.)
☐

C. Facility/Space/Transportation Needs

X (Continued block out times for us at Cam Park, something already granted to ESRM)

D. Lab Fee Requested **Yes** **No X (Lab fee requests should be directed to the Student Fee Committee)**

E. Other
☐

11. Will this new course alter any degree, credential, certificate, or minor in your program? **Yes** ☐ **No** ☒

If, YES attach a program update or program modification form for all programs affected.

Priority deadline for New Minors and Programs: **October 1, 2013** of preceding year.

Priority deadline for Course Proposals and Modifications: **October 15, 2013**, of preceding year.

Last day to submit forms to be considered during the current academic year: **April 15th**.

☐ Sean Anderson

☐ October 15,
2014

Proposer of Course (Type in name. Signatures will be collected after Curriculum approval)

Date

Approval Sheet

Program/Course: [REDACTED]

If your course has a General Education Component or involves Center affiliation, the Center will also sign off during the approval process.

Multiple Chair fields are available for cross-listed courses.

The CI program review process includes a report from the respective department/program on its progress toward accessibility requirement compliance. By signing below, I acknowledge the importance of incorporating accessibility in course design.

Program Chair		
Signature		Date
Program Chair		
Signature		Date
Program Chair		
Signature		Date
General Education Chair		
Signature		Date
Center for International Affairs Director		
Signature		Date
Center for Integrative Studies Director		
Signature		Date
Center for Multicultural Engagement Director		
Signature		Date
Center for Civic Engagement Director		
Signature		Date
Curriculum Chair		
Signature		Date
AVP		
Signature		Date