

To: Curriculum Committee

From: Undergraduate Research Office

Date Submitted: August 15, 2008

Request for: Course Addition/change of title as indicated

Submitted by: Mostafa Hemmati, Director of Undergraduate Research *Mostafa Hemmati*

Approved by: Vice President for Academic Affairs

Reviewed by: Registrar: *Jammy Ruodis*
Vice President:

I. Number: For the following the course number will be (dept prefix) 4951-4

School of Community Education: EAM, PS

School of Liberal and Fine Arts: ENGL, SOC, PSY, ANTH, CJ, RS, SPH, JOUR, TH, MUS, SPAN, FR, GER, HIST, POLS, PHIL, GEOG, ART, MUSM

School of Systems Science: MATH, RP, HA, COMS, ~~EE~~ ELEG, AGBU

For the School of Physical and Life Sciences, the course number will be:

~~CHEM 4991-4~~ ~~GEOL 4991-4~~ ~~HIM 4991-4~~ ~~NUR 4991-4~~ ~~PHYS 4991-4~~
BIOL, FW 4951-4 TR

Title: Undergraduate Research in (respective area, e.g.: Undergraduate Research in Chemistry). ~~This will constitute new courses in all areas with the exception of CHEM, GEOL, and PHYS where the existing title of "Special Problems in ..." should be changed to "Undergraduate Research in ..."~~

Catalog description: On demand. Requires departmental approval. Advanced students carry out independent research activity relating to a significant problem in a major field of study. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.

Description: Varies with the research activity.

app CC 10/24/08
app FS 11/12/08

Sample course syllabus:

Phys ~~4991-4~~ 4951-4
Undergraduate Research
Mostafa Hemmati

- 1. OFFICE HOURS:** My office is in McEver 32 and the designated office hours are
Monday: 8:00-10:00 and 2:00-5:00;
Tuesday: 4:00-5:00;
Wednesday: 8:00-10:00;
Thursday: 2:00-5:00;
Friday: 8:00-10:00
Phone: (479) 968-0340;
E-mail: mhemmati@atu.edu
- 2. CATALOG DESCRIPTION:** **Catalog description:** On demand. Requires departmental approval. Advanced students carry out independent research activity relating to significant problems in physics and astronomy. Supervised by faculty member. Formal report and presentation required. One to four credits depending on problem selected and effort made.
- 3. COURSE MATERIALS:** Journal articles
- 4. COURSE RATIONALE:** This course is a graduation requirement for students enrolled in the Engineering Physics program and also two degree options in the physical science program.
- 5. COURSE OBJECTIVES:** Upon completion of the course students will be able to collect information relevant to the research activity through a literature search; investigate different models, specially the fluid model; collect data; analyze data; prepare graphs; prepare research presentations; prepare reports, including a research article for publication; and make presentations in scientific conferences.
- 6. GENERAL EDUCATION OBJECTIVES:** Students taking this course, will receive a more detailed coverage of some of the concepts in physics. This course will particularly help students to "show competence in reasoning and handling of abstract and quantitative ideas and be able to create mathematical models and use mathematical techniques to solve the problems which they encounter."
- 7. ASSIGNMENTS:** Students will be required to complete an extensive literature search for relevant journal articles, read journal articles and make oral presentations on weekly basis, collect data, analyze data, prepare graphs, prepare a journal article for publication, and prepare research presentations.
- 8. ASSESSMENT:** Students' assessment will be based on the quality of their weekly reports, data collection, data analysis, preparation of research articles, and their research presentations.

9. GRADING: The grading criteria are as follows:

- 90% or better = A
- 80% or better = B
- 70% or better = C
- 60% or better = D

10. POLICY ON ABSENCES AND CHEATING: Students will be required not to miss more than three meetings/appointments during the semester. Those cheating will be reported to the appropriate university authorities.

.**end of sample syllabus**

Effective date or terms: Fall 2009

Course fees: No additional fees will be required.

II. Justification and feasibility of course

Currently, all university departments have their own "Special Problems" courses. The proposed course will

1. More accurately reflect the nature of the course than the title "Special Topics" or "Independent Study".
2. Reflect research accomplishments of our graduates in their transcripts and provide them better opportunities when applying to graduate schools or jobs requiring research background.
3. Provide additional strength to our accredited programs during their accreditation visits.
4. Make our programs more attractive to high school graduates wishing to attend college.
5. Reflect students' work and also assessment of their activities as required by research grant proposals.
6. Make research activities uniform across the campus.