

NOV 14 2008

## UNDERGRADUATE CURRICULUM PROPOSAL COVER SHEET

# REGISTRATION

Title of Proposal – Must begin with Department Abbreviation:  
ENGR 170, Introduction to Engineering

Check One:  Full Proposal or  Information Item

Effective Date for Curricular Offering: fall 2009 catalog

FROM: Dr. Michel E. Holder, Electrical Engineering, EMCS 315-D, x4358, michel-holder@utc.edu  
(proposal originator: include spok esperson's name, department, office number, telephone, e-mail)

Does this require new resources from the originating department or other department? no  
Please attach explanation if yes.

Faculty of the originating department approved this proposal on 11/14/08 (date),  
by a vote of 13 aye votes; 3 nay votes; 0 abstentions; 4 eligible voting members absent

The following have examined this proposal:

Dept Head/Director: Dr. Gary McDonald Gary H McDonald X  
(printed name) signature approve neutral disapprove\*

College Curriculum Committee Date: 11/13/08 Vote: 5-0 Signature of Chair: Gary H McDonald

Spokespersons for Affected Departments:

Gary H McDonald - ENGR - 1113108 Gary H McDonald X  
(name, department, date) signature approve neutral disapprove\*

\_\_\_\_\_  
(name, department, date) signature approve neutral disapprove\*

\_\_\_\_\_  
(name, department, date) signature approve neutral disapprove\*

\_\_\_\_\_  
(name, department, date) signature approve neutral disapprove\*

Dean/Director: Will Sutton Will Sutton X  
Dr. Will Sutton signature approve neutral disapprove\*

University Registrar: Linda Orth Linda Orth Comments: \_\_\_\_\_  
(printed name) signature

jm Provost: Phil Oldham Phil Oldham \_\_\_\_\_  
(printed name) signature approve neutral disapprove\*

\*Those who disapprove may attach an explanation

ACTIONS on this proposal:	Curriculum Committee	Faculty Senate
Date the proposal was considered	_____	_____
Vote of the body:	_____	_____
Accepted as information item (indicate date)	_____	_____
Approved as submitted (indicate date)	_____	_____
Approved with amendments (amendments indicated and transmitted to all signatories above, date):	_____	_____
Signature of Chair:	_____	_____

C.

1. a. ENGR 170 Catalog Description

170 Introduction to Engineering (3)

An introductory class designed to meet the needs of entering freshmen, especially those whose math placement scores prevent them from taking the usual first semester engineering classes. Topics include basic math, use of EXCEL and MSWord, simple machines, and some very basic concepts relating to statics, digital logic, electricity, construction, and other engineering topics of interest to the students.

Prerequisites: none

b. Pedagogical objectives:

1. Development of time management skills
2. Exposure to basic engineering concepts

c. A model syllabus is attached.

d. The evaluation method is given in the syllabus.

e. There is no laboratory/studio fee associated with this class.

2. a. Rationale for the class:

Many UTC freshmen declare their majors to be engineering even though their math scores are well below the level required to take Math 150/151 and any of the other first semester courses required by the various engineering disciplines. Some of these students are required to take four semesters of remedial math before they can begin taking any engineering classes. Because of this "separation from engineering", a large percentage of these students become discouraged and/or bored and drop out. ENGR 170 is designed to give these students some exposure to some extremely basic engineering concepts over a wide range of disciplines. From this early exposure, some of these students may realize they are not suited for a career in engineering and would do better in another area. In other instances, the class may help reinforce the reasons a student chose engineering as their course of study and help them decide which engineering discipline is best for them.

This course has been taught in the fall for the past two years as ENGR 199 section 002. In 2007 only eight students enrolled, and all eight completed the class. This year 25 students enrolled, and 22 students are presently attending the class. As shown in the course syllabus, attendance is required and is strictly monitored, with absences having a severe impact on a student's grade. The strict attendance policy is intended to teach students the importance of prompt class attendance and help them develop good time management skills. These skills are critical to the study of engineering at UTC.

This course is not intended to be a remedial class in mathematics. Frankly, it is more psychological than technical. It allows a student to register for a class having the prefix, "ENGR", without having to wait as much as a year of more to do so.

Dr. Michel E. Holder is presently teaching this class. The level of the material presented in the class is not complex, so teaching the class is not demanding from the aspect of technical expertise required. Any engineering professor could teach the class; in fact, any graduate engineer could teach it.

b. No additional library or laboratory material is required for this class.

c. This class does not have an impact on any department other than engineering, and it will not delay a student from completing their degree in a timely manner.

d. This proposal has no impact on the existing engineering program.

COURSE: ENGR 170  
 TITLE: Introduction to Engineering  
 FACULTY: Dr. Michel E. Holder  
 425-4358  
[michel-holder@utc.edu](mailto:michel-holder@utc.edu)  
 Office hours: 9:30 - 11:00 A.M. M - Th

PREREQUISITES: None

COURSE OBJECTIVES: This course introduces students to the types of material offered in introductory classes from several engineering disciplines along with a review of basic math. Participation in this course will enable students to make a more informed decision regarding which branch of engineering is the right career path for them. This course contains material which would be of benefit to students in non-engineering programs, such as construction management, engineering management, or business management.

ATTENDANCE POLICY: This policy is designed to teach freshmen the importance of class attendance. Each missed class will reduce a student's semester grade by **1 point for the first five** absences, and 2 points for each of the next five absences. The 11<sup>th</sup> absence will reduce their semester grade by an additional five points. **If a student misses more than 11 classes**, their grade for the semester will be an F.

MAKE-UP POLICY: Missed quizzes and exams may not be made up except for fully documented **EXTREME CIRCUMSTANCES**; however, one quiz grade will be dropped.

EVALUATION:	100 – 90 A	<b>Quiz &amp; Lab Average</b> .....	70 %
	89 - 80 B	<b>Attendance</b> .....	20 %
	79 - 70 C	<b>Final Exam</b> .....	<u>10 %</u>
	69 - 60 D		100 %
	under 60 F		

TEXTBOOK: None

ADA STATEMENT: If you are a student with a disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) and think that you might need special assistance or a special accommodation in this class or any other class, call the Office for Students with Disabilities at 425-4006 or come by the office - 110 Frist Hall.

TOPICAL OUTLINE: The schedule of topics presented in the class is not strictly scheduled in order to be responsive to the areas of interest to the students. However, the following areas of engineering will be presented in various depths:

- |                             |                                  |
|-----------------------------|----------------------------------|
| 1. Basic mathematics        | 9. Nuclear energy basics         |
| 2. Simple machines          | 10. Chemistry basics             |
| 3. Digital logic            | 11. Electricity, simple circuits |
| 4. Grades of bolts, threads | 12. Engineering design basics    |
| 5. Mechanical devices       | 13. Radio, cell phones           |
| 6. Computers, RAM           | 14. Switches, relays             |
| 7. Statics                  | 15. Construction basics          |
| 8. Basic EXCEL              | 16. MS-Word basics               |

TEACHING  
STRATEGY:

The major principle guiding the class is the expressed areas of interest of the students in the class. Based upon that, the class will consist of lectures with occasional laboratory exercises which will underscore the concepts presented during a previous lecture. Short videos will be shown several times during the semester. Online resources will be used and displayed on the overhead screen; these include Google, Play-hookey.com, etc.

Reading assignments will be given periodically. Some of these assignments will be on the internet while others will be in the form of handouts distributed via Blackboard. It is the responsibility of the student to check their UTC email account frequently to stay abreast of current information and assignments.