Introducing Freshmen to Engineering at Western Kentucky University

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I.   Introduction

In the past few years, Western Kentucky University (WKU) has developed a freshman seminar course entitled University College 101 (UC101) for the entire university. The purpose of this course is to introduce freshman to college life and equip them with the appropriate skills to succeed at the university level. Topics include study skills, time management, academic regulations, career planning, etc.

Each department is allowed to present its own versions of the freshman course to the students in their major. The Electrical Engineering Technology (EET) program in the Department of Engineering Technology at WKU has developed a freshman seminar course that meets the university requirements and also introduces the freshman to electrical engineering. This course examines the different aspects of electrical engineering and develops the problem-solving skills of the students. During the semester, the students study the history of engineering, the responsibilities of engineering, professional registration, and engineering ethics. Students also develop a foundation for problem-solving skills through various assignments. An important aspect of this course is the introduction of teamwork skills. Early in the semester the students are divided into teams to complete several assignments including building a simple robot.

II. University College 101

The university college course (UC101) is required for all beginning freshman and transfer students with less than 24 hours of course credit who are enrolled full-time. All sections use at least 50% of class time to cover core content and approximately 25% of class time on the Library Media Education component. This course is designed to enhance student success, retention and graduation. Through active learning, students develop effective study skills, library research skills, management of time and resources, and enhance personal lifestyles through wellness activities and campus involvement. This course directly supports the mission and objectives of WKU which include academic achievement and student success. UC101 provides entering students with guidance to cope with the transition to college studies and to make informed decisions regarding the selection of their programs of study.

The UC101 course is a two credit hour course and the course outline includes the following topics:

♦ Strategies for college success including motivation, note taking, studying, and test taking skills;
♦ Techniques for critical thinking and problem solving;
♦ Time management skills;
♦ Networking by learning about people and resources in the university community and opportunities for campus involvement;
♦ Use of campus technologies and accessing the campus computer network;
♦ Library research skills for retrieving and analyzing information;
♦ Personal and academic interests;
♦ Immediate and long term goals; and
♦ Communication skills, personal habits, and choices to promote personal wellness.

Approximately 70 sections of UC101 are offered each fall for incoming freshman. Many departments choose to offer their own version of UC101 because class advising, career choices, and critical thinking are presented in the class. It is more beneficial for departments to be able to advise their incoming freshman rather than a generic UC101 instructor.

III.   EET version of UC101

Every section of UC101 is required to adhere to the course outline stated above. In addition to these objectives, the EET section of UC101 requires additional objectives which are listed as follows:

♦ Identify the roles of different faculty members and organizations within the Department of Engineering Technology;
♦ Identify and locate appropriate University Units and responsibilities related to successful student utilization;
♦ Develop a broad understanding of different employment requirements and opportunities in electrical engineering;
♦ Develop an appreciation for the specific curricula in the different areas of emphasis in electrical engineering technology; and
♦ Introduce the students to a microcomputer and to learn to use various software packages which will be utilized in the EET curriculum.

A sample semester course schedule is listed in Table 1. Throughout the semester, the students are required to complete a variety of assignments which will prepare them for their academic careers as an electrical engineering student. For example, students are placed on teams of five early in the semester and then required to complete several group projects. During the last offering of UC101, the students were divided into teams and each team constructed a small remotely controlled robot from provided materials and instructions. The teams competed with their robots in a miniature soccer tournament. The teams were then charged with building a toy. The only restriction on the toy was that a mousetrap spring or the spring from an ink pen had to be used somewhere in the design. Each team built their toy and presented it to the class. The class voted on the "best" toy for the semester. These assignments built teamwork skills and a sense of community among the freshman students. Students must also use the Internet, email,

MS Word, and MS Excel to complete various assignments. Students are then prepared to use these tools when necessary in their academic career.

Table 1: Sample semester course schedule

Meeting #	Class topics
1	Introduction to class and getting acquainted with classmates and instructor
2	Surfing the Internet and sending email
3	Discussion of electrical engineering and viewing IEEE video
4	Keys to success and writing goals
5	Code of engineering, engineering as a profession, professional registration
6	Academic advising
7	Using a word processor
8	Visit to Kentucky Museum (on WKU campus)
9	Using a word processor
10	Teamwork skills and assigning first team project
11	Visit to WKU's Career Services
12	Problem solving skills
13	Team project competition
14	Time management
15	Study skills
16	Using a spreadsheet
17	Using a spreadsheet
18	Money management
19	Plant trip to local industry
20	Lifelong learning
21	Presentations of second team design project
22	Presentations on the history of engineering
23	Presentations on the history of engineering
24	Presentations on the history of engineering

IV.   Conclusion

The many benefits of offering an EET version of the University College 101 course are evident after a few years of requiring this course. The students are provided many opportunities to develop relationships with themselves and the EET faculty. The students are able to explore the career of an electrical engineering technology graduate while utilizing several important skills. These skills include:
♦ Problem solving;
♦ Teamwork;
♦ Technical writing;
♦ Oral communication;
♦ Internet surfing; and
♦ The ability to use various software packages.

This course is a valuable resource for freshman students entering the EET program. Students quickly develop a sense of belonging which is often important to a fulfilling college experience. In the future, the EET version of UC101 will continue to be refined to maximize the benefit to the students.

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