

## **Dual Degree Program**

### **Master of Engineering in Engineering Management Master of Science in Telecommunication**

Offered by the Engineering Management Program and the Interdisciplinary Telecommunications Program of the University of Colorado at Boulder

September 8, 2005

#### **1. Statement of Purpose**

The University of Colorado at Boulder's Interdisciplinary Telecommunications and Engineering Management programs provide terminal master's degrees to both local and distant professionals, in support of the campus' mission to provide professional education that builds on core strengths in Engineering, Business, and other fields. The programs are complementary in that the Engineering Management program greatly enhances practical management and business skills for technical professionals, while the Interdisciplinary Telecommunication Program provides particular technical skills and an overarching framework of technology, business, and policy to professionals in telecommunications. An ability to pursue both degrees would be attractive to a number of students, in particular distance education students who will find this an unusual and accessible combination of professional education.

#### **2. Description of Administration**

The program is jointly administered by the Faculty Directors of the Engineering Management and Interdisciplinary Telecommunications Programs. These directors are peers within the Center for Advanced Engineering and Technology Education (CAETE) and are in frequent contact.

The tuition rates of the two programs are the same. The student's primary program is the one to which he or she is first admitted. Student's who apply to both programs simultaneously with the intention of pursuing a dual degree if admitted to both may designate which program they wish to be defined as primary.

Degrees will be awarded simultaneously. The student's primary program is responsible for verifying with the secondary program that all requirements have been met and for communicating the status of the student as a dual degree student to the graduate school.

Each program is responsible for standards, policies, and procedures for courses and other requirements associated with that program. Issues that appear to involve interactions between the two programs will be resolved by the Faculty Directors working together; failing agreement, they will be resolved by the Dean of the College of Engineering and Applied Science or his or her designee.

Upon approval of this proposal, the Programs will either (i) apply to the Office of the Registrar for a unique major code to identify students participating in the program or (ii) will use as primary major code that of the first program to which the student was admitted and as secondary major code that of the second program to which the student was admitted. The choice of (i) or (ii) will be determined by the then current policy of the Graduate School.

### **3. Admission to the Program**

Students must apply to and be admitted separately by each program. The programs have identical tuition rates. If the programs change tuitions rates so that they are no longer identical, then the primary unit will be the one with the higher tuition rate. Otherwise, the primary unit is the unit to which the student is first admitted; a student applying simultaneously may select which unit they desire to be primary.

A student may enter the dual program starting from either program. The requirements depend on which program they start from, defined as their primary program, and as described in Section 4.

Students request enrollment in the dual program by annotating their applications in this manner or by asking that the respective program administrators so annotate their applications.

Programs maintain coordination via interactions between their program administrators and faculty directors. The programs are physically close (one floor apart) and organizationally close (peers within the Center for Advanced Engineering and Technology Education).

The programs will share application information with each other on request for applicants that request enrollment in the dual program.

Required test scores and other academic criteria for admission are the same as those required by each program for their respective Master's degrees. Applicants must meet the normal deadlines for individual applications to the program that is to be the primary program. Applicants must apply to the secondary program and the dual degree program by the normal deadline prior to the term in which the student expects to initiate enrollment in the classes of the secondary program.

Students are permitted to pursue other dual or joint degrees and certificates.

The student's primary department is responsible for making sure that the student's major code is changed to the correct, new dual code or the appropriate use of primary and secondary major code as defined at the end of Section 2 above.

#### 4. Description of Curriculum

Curricular requirements for the dual degree depend on which program is the primary program. The student is responsible for completing all the requirements of the Master's degree of the primary degree as well as the specified requirements of the secondary program.

##### *Primary Program ITP, also Pursuing ME in EMEN*

A student who is pursuing the MS, Telecommunications degree and wishes to also obtain a ME, Engineering Management, must complete the following additional requirements.

1. Be admitted to the Engineering Management Program.
2. If EMEN 5050/TLEN 5050 (Leadership and Management), EMEN 5900/TLEN 5750 (Research Techniques), and EMEN 5020 (Finance and Accounting for Engineering Managers) have been successfully completed as part of the Telecommunications degree, an additional 15 hours of engineering management course work are required consisting of the following five courses:
  - a. EMEN 5010 Introduction to Engineering Management
  - b. EMEN 5030 Project Management Systems or EMEN 5031 Software Project Management
  - c. EMEN 5040 Quality, Strategy, and Value Creation
  - d. EMEN 6800 Capstone Project
  - e. An elective Engineering Management course drawn from the remaining EMEN courses.
3. EMEN 5050/TLEN 5050 (Leadership and Management), EMEN 5900/TLEN 5750 (Research Techniques), and EMEN 5020 (Finance and Accounting for Engineering Managers) have to be successfully completed as part of either the Telecommunications or Engineering Management degree programs. If not completed as part of the Telecommunications degree, then they will need to be completed as part of the Engineering Management degree. Hence, the total additional credit hours required for an engineering management degree will range from a minimum of 15 to a maximum of 24 credit hours.
4. No courses may be transferred from other graduate schools or other programs, schools, and departments at the University of Colorado at Boulder, except as approved by the Engineering Management Faculty Director.
5. A minimum GPA of 3.0 with no grades less than a C.

##### *Primary Program EMEN, also pursuing MS, Telecommunications*

A student who is pursuing the ME, Engineering Management degree and wishes to also obtain a MS, Telecommunications, must complete the following additional requirements.

1. An additional 24 credit hours of course work in total. Credits accumulated fulfilling requirements (3)-(8) below all count toward this total.

2. TLEN 5300, Telecom Theory and Applications, unless waived by advisor or the student has completed EMEN 5000 Engineering Analysis. Note that this course does not count towards the 24 credit hour requirement of (1).
3. TLEN 5310 Telecommunication Systems and TLEN 5330 Data Communications 1.
4. A total of at least 12 credit hours of TLEN *technology* courses, including those taken under requirement (3).
5. At least 3 credit hours of TLEN *policy and law* courses.
6. At least 3 credit hours of *programming* courses unless waived by advisor (typically waived for students with substantial academic or professional programming experience).
7. At least 2 credit hours of TLEN 5600 Telecommunications Seminar.
8. Either the Capstone or Thesis option.
  - a. Capstone Option. TLEN 5700 Research Methods (1 credit hour) and TLEN 5710 Capstone 1 (1 credit hour). Students who have taken EMEN 5900 or another research methods course may request to audit TLEN 5700 (which will not count towards the total credit hours required of the dual degree program).
  - b. Thesis Option. TLEN 5700 Research Methods (1 credit hour) or EMEN 5900 Research Techniques or another research methods course approved by the advisor. A combined total of 7 credit hours of research methods and thesis credits.
9. A minimum GPA of 3.0 with no grades less than a C.
10. No courses may be transferred from other graduate schools or other programs, schools, and departments at the University of Colorado at Boulder, except as approved by the Interdisciplinary Telecommunications Program Faculty Director.

Minimum registration requirements are those specified by the Graduate School for Masters' Degrees (requires registering full-time at CU Boulder for at least two semesters or at least three summer sessions/part-time semesters or combination of at least one full-time semester and two summer sessions/part-time semesters unless subsequently changed by the Graduate School, in which case the Graduate Schools then current rules apply). The time limit for the dual degree is equal to the time limit for the primary program's degree (measured from admission to the primary program) plus two years. Students may hold either full-time or part-time status. Students are subject to the normal satisfactory progress and academic standard requirements of each program for that program's curriculum; the student's primary program is responsible for confirming with the secondary program at no less than an annual interval that the student is making satisfactory progress.

A student may voluntarily terminate dual degree status at any time; the student will revert to being a student in the primary program only. The secondary program may revoke dual degree program status of the student under the normal procedures that program would use to revoke admission of a student; the student will then revert to being a student in the primary program only. The primary program may revoke dual degree program status of

the student under the normal procedures that program would use to revoke admission of a student, the student will then become a student in the secondary program only.

The Faculty Directors of the two programs may endorse minor changes to the curricular requirements to maintain consistency with the respective program's master's degrees (e.g., to reflect changes in course names or numbers) by executing annexes to this document and forwarding them to the Graduate School.

## 5. Resource Needs

The program does not require any new resources other than the necessary administrative effort in coordinating and administering the program.

## 6. Endorsements

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Engineering Management Program

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Tom Lookabaugh  
Faculty Director,  
Interdisciplinary Telecommunications  
Program

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