

# MS (Special Majors)

*NTU is not accepting Special Majors applications at this time while the curriculum is under review.*

The NTU Special Majors program is designed to fill the needs of students with fields of interest that go beyond the existing NTU degree programs. Within specified specialty areas, students may pursue a program of study that enables them to earn a specialized master's degree.

The Master of Science (Special Majors) program consists of 36 credits chosen from core, specialization, and elective areas. The core and specialization credits form a coherent and acceptable collection of courses that provide students with a firm understanding of their chosen area of concentration. The elective courses may be selected from any of the graduate-level courses offered in the NTU catalog.

Completion of the curriculum requires approximately one-and-a-half years of full-time graduate study. Part-time students enrolled through NTU should expect to fulfill the requirements in three to six years, depending on the course load.

## Admissions Requirements

*NTU is currently not accepting applications to this program. The following information is intended for students admitted prior to November 2004.*

Students must meet the following eligibility requirements for regular admission into the Special Majors program:

- BS degree in an appropriate accredited science or engineering program from a U.S. institution; or the equivalent from a foreign institution.
- Cumulative undergraduate G.P.A. of at least 3.0 on a 4.0 scale.

Students who do not meet these requirements may be granted provisional admission into the program, depending on academic background and experience. For additional information about provisional admission status, see the Admission section of this bulletin.

## Curriculum

Students must complete a minimum of 36 credits for the Special Majors program, consisting of three

core courses, seven specialization courses, and two elective courses.

### Specializations

Specializations available in the Special Majors degree program include Telecommunications Management, Optics, Information Systems Engineering, and Technical Management. A complete list can be found on NTU's Web site under the Special Majors program description.

The following sample specialization programs illustrate the flexibility available to students under the Special Majors program. *Specific courses and course requirements may change. Updates will be posted on the NTU Web site.*

### Telecommunications/Telecommunications Management Specialization

Course No.	Example Title	Credits
<b>Core Courses (9 credits)</b>		
TC 502	Introduction to Telecommunications Systems	3
TC 721	Data Communications 1	3
TC 751	Wireless, Cellular, and Personal Telecommunications	3
<b>Specialization Courses (21 credits)</b>		
TC 770	Telecommunications Analysis, Planning, and Design	3
TC 774	Management of Telecommunications	3
TC 775	Wireless Management	3
TC 583	Telecommunications Management and Regulations	3
TC 796	Switching and QoS Management in IP Networks	3
MG 770	Legal and Policy Issues in Business	3
MG 723	Supply Chain Management	3
<b>Suggested Elective Courses (6 Credits)—Choose 2</b>		
TC 745	Wireless Networks	3
TC 725	Internet Communications Using SIP	3
QM 710	Operations Research Models	3
MG 720	Marketing Management	3
TO 568	Project Estimating and Cost Management	3

### Technical Management Specialization

Course No.	Example Title	Credits
<b>Core Courses (9 credits)</b>		
NB 750	Accounting and Finance—Measurement and Flow Control for the Economic Engine	3
EF 735	Economic Decision Analysis	3
TO 760	Introduction to Project Management	3

Specialization Courses (21 credits)—Choose 7		
MA 520	Probability and Statistics for Engineers	3
MB 710	Introduction to Engineering Management	3
NB 710	Technology and Operations—Moore's Law and Other Business Accelerators	3
NB 720	Organizational Behavior—Working Within the Equations of State	3
NB 762	Project Planning, Scheduling, and Control	3
QM 710	Operations Research Models	3
SY 563	Integrated Risk Management	3
TO 750	Total Quality Management	3
TO 761	Advanced Project Management	3
TO 771	Reliability Engineering	3

Suggested Elective Courses (6 Credits)—Choose 2		
MG 723	Supply Chain Management	3
MG 770	Legal and Policy Issues in Business	3
NB 730	Marketing—Maximizing the Organizational I/O Bus	3

### Optics Specialization

Course No.	Example Title	Credits
Core Courses (9 credits)		
EM 711	Introduction to Fourier Optics	3
EM 513	Fiber Communications and Systems	3
EM 716	Optical Design and Instrumentation	3

Specialization Courses (21 credits)		
CC 510	Introduction to Communications and Signal Processing	3
EM 714	Advanced Fiber Optics	3
EM 715	Optical Detectors and Detector Systems	3
EM 718	Diffraction and Interferometry	3
EM 722	Integrated Optics	3
EM 740	Electromagnetic Theory	3
TC 512	Fiber Optic Telecommunications	3

Suggested Elective Courses (6 Credits)—Choose 2		
EM 735	Microwave and RF Wireless Systems	3
EM 736	Active Microwave Circuits	3
EM 721	Introduction to Lasers	3

### Information Systems Management Specialization

Course No.	Example Title	Credits
Core Courses (9 credits)		
TO 710	Information Systems	3
CS 750	Database Management Systems	3
SE 787	Management of Computer and Information Systems	3

Specialization Courses (21 credits)—Choose 7		
CS 760	Client/Server Computing	3
MG 750	Management Information Systems	3
SE 512	Software Systems Engineering: An Enterprise Architecture Approach	3
SE 786	Business Process Innovation	3
TC 721	Data Communications I	3
CS 550	Information Systems	3
CS 755	Distributed Database Design	3
EF 735	Economic Decision Analysis	3

Suggested Elective Courses (6 Credits)—Choose 2		
ST 760	Information System Security	3
CS 740	Operating Systems Principles	3
CS 758	Datamining	3
SE 710	Software Engineering	3

### Program of Study Plan

Admitted students should submit a Program of Study Plan (PSP) to NTU prior to completion of six semester credit hours. Failure to submit a PSP increases the possibility of students completing duplicate courses or courses that are not applicable to their degree programs. Although NTU cannot guarantee preferred course availability in any given term, the PSP documents do guide course selection from partner universities. It may be necessary for a student to revise an approved PSP when course availability does not comply with the student's needs. The PSP form should be submitted through the NTU Web site.