



## 4+1 Program Curriculum Check Sheet

Your most important academic resource is your advisor! See him/her regularly. Completing the 4+1 program requires careful planning. Please meet with your advisor each semester to ensure that you have an academic plan that will satisfy all undergraduate and graduate requirements.

Following this check sheet will ensure that you will complete your bachelor's degree in four years, and enable you to complete a master's degree with one additional year of work.\*

### Undergraduate ITS Core Requirements

---

You must complete the following three (3) courses with a grade of C or better:

- ITS 2140 Introduction to Information and Telecommunication Systems (3 semester hours)  
Prerequisite: None
- ITS 2300 Data Communications w. Lab (4)  
Prerequisite: None
- ITS 3100 Internet Applications and Networking Systems w. Lab (4)  
Prerequisite: C or Better in ITS 2140 and ITS 2300

---

You must complete the following 3 courses.

- ITS 3110 Network Transport, Optical Networking w. Lab (4 semester hours)  
Prerequisite: ITS 3100
- ITS 5020 Strategic Decision Making in Information and Telecommunication Industries (3) (Must be completed during your senior year)  
Prerequisite: ECON 1030 and C or better in ITS 2140
- ITS 4440 Lifecycle Management of Telecom Systems (3) (Must be completed during your senior year)  
Prerequisite: ITS 4020 and ITS Major

---

**Elective Planning, Step 1: Plan on taking one of the following graduate electives during your senior year; during the balance of your undergraduate years, do not select the corresponding undergraduate course of the same title as a graduate elective.**

- ITS 5019 Information and Telecommunication Policy I (4)
- ITS 5310 Privacy in the Information Age (4)
- ITS 5750 Internet Engineering (4)  
No credit if CS 5750

---

**Elective Planning, Step 2: Select three of the following graduate electives as graduate-year electives; during your undergraduate years do not select the corresponding undergraduate course of the same title as a graduate elective.**

- ITS 5290 Comm Network Analysis and Design (4)
- ITS 5370 Wireless Networking (4)
- ITS 5410 Voice over IP Systems (4)
- ITS 5510 Telecom Network Security (4)
- ITS 5530 Encrypted Communication (4)
- ITS 5900 Topical Seminar (4) Note: This course is repeatable if topics differ.
- ITS 6790 Theory of Communication Networks (4)
- ITS 6900 Topical Seminar (4)

---

\*It is recommended that you select the comprehensive exam option if you want to ensure completion of the master's degree in one additional year. Pursuing the thesis or professional project option may take additional time to complete.

---

**Elective Planning, Step 3—Undergraduate Electives:** In consultation with your advisor, cross off the electives that you have reserved in Steps 1 and 2. Then select and complete five undergraduate electives (15 credit hours) from those that remain on the list. Please note: You must complete ITS 4910, Internship in Communication, as one of your undergraduate electives.

- ITS 3019 Information and Telecommunication Policy I (3)  
Prerequisite: C or better in ITS 2140
- ITS 3021 Information and Telecommunication Policy II (3)  
Prerequisite: C or better in ITS 3019
- ITS 3790 Geographic Information Systems (3)  
Prerequisite: ITS 2140
- ITS 4050 Market Structure (3)  
Prerequisite: ITS 4020
- ITS 4070 International Communication Networks (3)  
Prerequisite: C or Better in ITS 3020
- ITS 4110 Pricing of Telecommunication Services (3)  
Prerequisite: ITS 3020
- ITS 4290 Comm Network Analysis and Design (3)  
Prerequisite: ITS 3110 and PSY 2110
- ITS 4310 Privacy in the Information Age (3)  
Prerequisite: JR or SR
- ITS 4370 Wireless Networking (3)  
Prerequisite: C or Better in ITS 2300
- ITS 4410 Voice over IP Systems (3)  
Prerequisite: C or Better in ITS 3100
- ITS 4510 Telecom Network Security (3)  
Prerequisite: C or Better in ITS 3100
- ITS 4530 Encrypted Communication (3)  
Prerequisite: ITS 2300
- ITS 4750 Internet Engineering (4)  
Prerequisite: ITS 3100, No credit if CS 4750
- ITS 4910 **Internship in Communication (1-12 semester hours)--Required**  
Prerequisite: Permission
- ITS 4920 Practicum in Communication (1-3 semester hours)  
Prerequisite: Permission
- ITS 4900 Topical Seminar (1-3)  
Prerequisite: ITS 3020 and ITS 3100

---

These undergraduate courses should not be taken if you are an ITS major. If you completed the courses prior to becoming an ITS major, they do not count toward any ITS graduation requirement. See your advisor.

- ITS 1010 Consumer Issues (3 semester hours)
- ITS 2010 Understanding Internet Technology (3)

---

This optional undergraduate course is not required and does not count as an elective. See your advisor.

- ITS 4930 Special Studies (1-3)  
Prerequisite: Permission
-

### General Undergraduate Requirements

You must complete these 12 courses. You can choose among several programming courses. See your advisor.

- ACCT 1005 Foundations of Accounting (3)  
Prerequisite: Math Placement level 1 or higher
- ECON 1030 Principles of Microeconomics (3) (Tier 2: 2SS)  
Prerequisite: Math placement level 2 or higher or permission.
- ECON 1040 Principles of Macroeconomics (3) (Tier 2: 2SS)  
Prerequisite: Math placement level 2 or higher or permission.
- MGT 2000 Introduction to Management (3)  
Prerequisite: SOPH OR JR OR SR, Not COB, No Credit if taken after MGT 2100.
- MKT 2020 Marketing Principles (3)  
Prerequisite: NOT COB, No Credit if taken after MKT 2400.
- PSY 2110 Statistics for the Behavioral Sciences (4) (Tier I Quantitative Skills: 1M)  
Prerequisite: Math Placement level 2 or higher or MATH 1200 or 1300 or 2301 & (NOT MATH 2500 or QBA 2010 or ECON 3810 or COMS 3520)  
See your advisor for other choices, which include QBA 2010, ECON 3810, and COMS 3520.
- FIN 3000 Foundations of Financial Management (3)  
Prerequisite: ACCT 1010 & NOT COB & NOT 3100. No Credit if taken after FIN 2400.
- COMS 1030 Fundamentals of Public Speaking (3) (Tier 2: 2HL)  
Prerequisite: None
- MIS 2021 Business Information Systems Nonmajor (3)  
Prerequisite: Not COB, No credit if MIS 2020
- Computer Programming  
See your advisor for choices, which include CS 2300, CS2400, ET 2100, and others.  
CS 2300 is a Tier 2AS course.

### Undergraduate Area of Concentration

The area of concentration gives you a chance to identify an area which will help you prepare for your specific individual career goals. The area of concentration cannot be a random mix of courses; it should be a group of **five** courses, usually from one or two departments, which contribute to a telecom career. Examples of areas of concentration include Computer Science, Management Information Systems, Management, Communication Studies, International Studies, Political Science, Economics, Marketing, Foreign Languages, and many other possibilities.

You should begin discussing your choices with your advisor as soon as possible. By the time you have attained junior rank and have completed ITS 2140, you should have identified your **four-course** area of concentration.

Please note: Courses identified as part of the area of concentration cannot be used to fulfill any other requirements for the ITS curriculum.

Check in the school office for the Declaration of Area of Concentration form which must be completed and filed in the school office. The Declaration form also has samples of areas that have worked for others.

## Graduate Year Requirements:

Students can elect one of three culminating experiences: 1) a thesis, 2) a professional project, or 3) a comprehensive examination. However, students wanting to complete their degree in one additional year should plan on taking the comprehensive examination option. Those selecting the comprehensive exam complete the advanced reading course and pass a comprehensive examination that is based on a list of readings where students are expected to apply concepts from their coursework in their responses. (Students can take the comprehensive examination in either November or April.)

Students electing the thesis option are expected to identify a significant technical or policy question conduct a thorough literature review of the topic, formulate an appropriate research approach, collect and analyze data, draw defensible conclusions, and produce a well-written, coherent thesis. Students electing the professional project option are expected to identify a specific project relevant to this field of study, research relevant literature, identify specific issues, examine available alternatives, recommend the optimal alternative, and produce a well-written, coherent report detailing all aspects of the project. Students are encouraged to find a project at their place of employment (as either an intern or permanent employee).

Students electing the thesis or project options must form a 3-person committee chaired by the student's advisor and submit to that committee a written thesis or project proposal. This proposal must be approved by the committee and then submitted to the Graduate Director. The format of a thesis must be in accordance with the Thesis and Dissertation Services Guidelines, specifically the Scripps College of Communication for APA/MLA template; the thesis is submitted to the College through Thesis and Dissertation Services. The format of a project report must also follow these guidelines; the project is submitted to the McClure School.

All students must select an advisor, and meet with their advisor during the advising season of each semester. The advisor approves the student's "MITS Student Advising Planning Sheet" and also approves the student's "MITS Semester Registration Approval Sheet" each semester. The "Student Advising Planning Sheet" must also be endorsed by the Graduate Director. The "Student Advising Planning Sheet" includes the desired cognate courses and the student's choice of culminating experience. The "Student Advising Planning Sheet" should be approved before the beginning of the second semester of study; students should not assume that courses taken before a "Student Advising Planning Sheet" is approved will be recognized as cognate credit.

### 1. Core Graduate Courses (both courses required; a total of 8 hours required):

\_\_\_\_\_ ITS 6000: Research Methods in Information and Telecommunication Systems (4)

\_\_\_\_\_ ITS 6250: Information Networks (4)

### 2. Elective Graduate Courses (Four [4] courses required; a total of 16 hours required)

Based on the elective planning completed above, select your graduate electives.

**Technical Elective Courses:**

- \_\_\_\_\_ITS 5290: Communication Network Analysis and Design (4)
- \_\_\_\_\_ITS 5370: Wireless Telecommunications (4)
- \_\_\_\_\_ITS 5390: Communication Technology Lab Practicum. (4)
- \_\_\_\_\_ITS 5410: Voice over IP (4)
- \_\_\_\_\_ITS 5510: Telecommunication Network Security (4)
- \_\_\_\_\_ITS 5530: Encrypted Communication (4)
- \_\_\_\_\_ITS 5750: Internet Engineering. (4)
- \_\_\_\_\_ITS 6790: Theory of Communication Networks (4)
- \_\_\_\_\_ITS 6900: Topical Seminar (4)
- \_\_\_\_\_ITS 6910: Internship (Variable hours) **MAY NOT BE USED AS AN ELECTIVE. MAY BE USED AS COGNATE.**
- \_\_\_\_\_ITS 6930: Independent Study (Variable hours)

**Policy Elective Courses:**

- \_\_\_\_\_ITS 5019: Information and Telecommunication Policy I (4)
- \_\_\_\_\_ITS 5050: Competition and Market Structure in Telecommunications Industries (4)
- \_\_\_\_\_ITS 5070 International Communication Networks (4)
- \_\_\_\_\_ITS 5110: Pricing of Telecommunications Services (4)
- \_\_\_\_\_ITS 5310: Privacy in the Internet Age (4)
- \_\_\_\_\_ITS 5330: IT Compliance and Planning (4)
- \_\_\_\_\_ITS 6030: Advanced Policy and Regulation for ICT Networks (4)
- \_\_\_\_\_ITS 6090: Telecommunications and Economic Development (4)
- \_\_\_\_\_ITS 6900: Topical Seminar (4)
- \_\_\_\_\_ITS 6930: Independent Study (Variable hours)

**3. Graduate Cognate Courses (a total of 4 credit hours required) :**

These courses are selected by the student in consultation with the advisor, and must be in the approved and endorsed Plan of Study. The cognate courses can be taken outside of ITS or can be an additional ITS elective course. One ITS elective course satisfies the requirement, while coursework outside ITS may require more than one course to earn at 4 credit hours. ITS 6910 (Internship) may be used as a cognate course.

\_\_\_\_\_ Cognate Course \_\_\_\_\_

\_\_\_\_\_ Cognate Course \_\_\_\_\_

**4. Culminating Graduate Experience (4 hours required, either thesis hours, project hours, or readings hours, depending on culminating experience selected):****Thesis Option:**

\_\_\_\_\_ ITS 6950: Thesis (4)

**Professional Project Option:**

\_\_\_\_\_ ITS 6945: Professional Project (4)

**Comprehensive Examination Option:**

\_\_\_\_\_ ITS 6935: Advanced Readings in Communication Technology and Policy (4)