TELECOMMUNICATIONS - DOCTOR OF PHILOSOPHY (PHD)

The telecommunications PhD program is on-campus only.

The interdisciplinary telecommunications program PhD is designed for highly motivated students seeking to conduct research at the intersections of traditional telecommunications technology, economics and policy disciplines. Students learn the necessary skills to conduct research, along with a focused study plan on the specific technical areas of their interests, often mirroring one of the established areas of research in the program, such as broadband networking, wireless, policy and cybersecurity.

Applicants may have already earned a master’s degree or have substantial work experience in the private or public sectors in the information communications, telecommunications or multimedia technology fields. They may also be high-achieving students straight from undergraduate study who will earn an MS as they progress toward a PhD degree.

For more information, visit the department’s PhD in Telecom (http://www.colorado.edu/itp/phd-program) webpage.

Requirements

Course Requirements

Students must complete a total of at least 60 credits in graduate-level courses (i.e., courses taken subsequent to receiving their MS) in order to fulfill the requirements for a PhD degree.

The following course requirements are subject to change; for the most current information, see the department’s ITP PhD Program (http://www.colorado.edu/itp/node/228/attachment) document.

Required Courses and Semester Credit Hours

Required Core Courses (8 credit hours)

- **TLEN 7001** Interdisciplinary Telecom Analysis 3
- **TLEN 7000** Current Topics in Telecommunications (Network Analysis Techniques) 3
- **TLEN 5700** Research Methods 2

Required Technology Courses (6 credit hours)

- **TLEN 5310** Telecommunications Systems 3
- **TLEN 5330** Data Communications 1 3

Required Business/Economics/Policy Courses (9 credit hours)

- **TLEN 5010** Network Economics and Finance I 3
- **TLEN 5130** Telecommunications Business Strategy 3
- **TLEN 5210** Principles of Telecommunications Policy 3

Elective Courses (7 credit hours)

Thesis Research (30 credit hours) 30

Total Credit Hours 60

Preliminary Examination

The preliminary examination consists of two components: a preliminary paper and successful demonstration of proficiency of ITP core courses. All students must complete both the prelim paper and all ITP core courses by their fourth semester (the spring semester of their second year, unless they have successfully petitioned the ITP PhD Preliminary Examination Committee for an exception by the end of the first month of the fall semester of their second year).

Comprehensive Examination

Students who have passed the preliminary examination at the PhD level and completed the required course work (a total of 30 credits) are eligible to take the comprehensive examination the following year, roughly 12 months after the preliminary examination. The comprehensive exam consists of an oral presentation of a written thesis proposal that is reviewed and approved by the student’s Thesis Committee. The thesis proposal should describe the problem statement, research methodology, proposed research plan, along with a brief review of the background of the topic and summary of early results. The research plan should break down the research into development phases and include a tentative schedule for the completion of each research phase.

PhD Dissertation

Following the semester in which the comprehensive exam is passed, the student must be continuously registered each fall and spring for dissertation hours until the student successfully defends his or her dissertation or formally withdraws from the program. These students are required to register for at least 5 credit hours per semester of dissertation research (on campus), or for at least 3 credit hours per semester if dissertation research takes place off campus (distance).