

## Ph.D. in Information Systems and Communications Curriculum & Course Descriptions

<b>Ph.D. in Information Systems and Communications (60 credits)</b>
<b>YEAR 1: Fall (10 credits)</b>
<ul style="list-style-type: none"> <li>ISCM 8010 Colloquium Orientation Seminar I (1 credit)</li> <li>ISCM 8110 Theories in Action in Information Systems and Communication (3 credits)</li> <li>ISCM 8120 Information Systems and Communication in Cybersociety (3 credits)</li> <li>ISCM 8130 Introduction to Research Process for ISC (3 credits)</li> </ul>
<b>YEAR 1: Spring (11 credits)</b>
<ul style="list-style-type: none"> <li>ISCM 8140 Information Design and Human Communications for ISC (3 credits)</li> <li>ISCM 8150 Theory Development &amp; Knowledge Management for ISC (3 credits)</li> <li>ISCM 8160 Rhetorical, Semiotic and Ethno-cultural Foundations for ISC (3 credits)</li> <li>ISCM 9100 Dissertation I – Research Topic Development (2 credits)</li> </ul>
<b>YEAR 1: Summer (3 credits)</b>
<ul style="list-style-type: none"> <li>ISCM 9200 Dissertation II – Literature Search (3 credits online)</li> </ul>
<b>YEAR 2: Fall (10 credits)</b>
<ul style="list-style-type: none"> <li>ISCM 8020 Colloquium Seminar II (1 credit)</li> <li>ISCM 8210 Advanced Research Design for ISC (3 credits)</li> <li>ISCM 8220 Data Analytics: Managerial Perspectives (3 credits)</li> <li>ISCM 8230 Quantitative Research Methods I for ISC (3 credits)</li> </ul>
<b>YEAR 2: Spring (8 credits)</b>
<ul style="list-style-type: none"> <li>ISCM 8240 Qualitative Research Methods for ISC (3 credits)</li> <li>ISCM 8250 Quantitative Research Methods II for ISC (3 credits)</li> <li>ISCM 9300 Dissertation III – Dissertation Proposal Completion &amp; Defense (2 credits)</li> </ul>
<b>YEAR 2: Summer (3 credits)</b>
<ul style="list-style-type: none"> <li>ISCM 9400 Dissertation IV – Data Collection (3 credits online)</li> </ul>
<b>YEAR 3: Fall (10 credits)</b>
<ul style="list-style-type: none"> <li>ISCM 8030 Colloquium Seminar III (1 credit)</li> <li>ISCM 8310 Economics of Information Systems in the Digital Age (3 credits)</li> <li>ISCM 8320 Information Security and the Law (3 credits)</li> <li>ISCM 9500 Dissertation V – Data Analysis (3 credits)</li> </ul>
<b>YEAR 3: Spring (5 credits)</b>
<ul style="list-style-type: none"> <li>ISCM 8330 Contemporary Issues in ISC (3 credits)</li> <li>ISCM 9600 Dissertation VI – Dissertation Completion &amp; Defense (2 credits)</li> </ul>

**YEAR ONE (24 credits)**

**Fall 1 Term (10 credits)**

**ISCM 8010 Colloquium Orientation Seminar I (1 credit).** This orientation seminar introduces the Ph.D. in Information Systems and Communications program to the newly admitted students. The

faculty and the curriculum courses are introduced to the first-year cohort. Initial contacts are made between students and faculty to get to know each other and their contexts. Students write an orientation and reflection paper on the Ph.D.-ISC program in relation to their contextual, academic, and professional needs

**ISCM 8110 Theories in Action in Information Systems and Communication (3 credits).**

This foundational course establishes the context by which scholars have developed and applied theories and application of theories in information systems and communications which attempt to describe incremental developments, innovations, communication practices, impact and applications of technology within organizations and society in the early 21st century. Theoretical application will be analyzed first at the individual level and enhanced to include individuals within the organization to finally organizations and their adaptation to technological innovation. Through a series of readings, case study analyses, and application exercises, students explore the information centric attributes (behavioral and technological) of the information age organization and the information infrastructure required to support it. Focus is on information systems theory, problem analysis and strategy, and framing as modeling techniques. Research topics are introduced and developed.

**ISCM 8120 Information Systems and Communication in Cybersociety (3 credits).**

This course extends the theories course content by focusing on the cybersociety, which evolved from Shannon & Weaver's pure medium or information theory where information is "transmitted" to the second media age of the internet or internet as emancipation. Computer-mediated communication's technological, societal and organizational evolution, impact, immediacy and integration into daily life has altered how individuals perceive information, generate information and interpret information. Students will explore the transmission view of media where content, mediation of reality, symbol representation and logocentric or "presence" were characteristics to the ritual view where news is entertainment and performance, individuals interact with a medium, integration of mediums in all phases of existence all the time. Readings, medium monitoring, case study analyses and reaction papers will guide learning in this course.

**ISCM 8130 Introduction to Research Process in ISC (3 credits).**

This course teaches students to understand a doctoral research process by assessing an organizational or community context to identify needs or problems, frame those needs or problems as either problem statements, and formulate research questions or hypotheses. It provides an overview of a dissertation topic, its delimitations, purpose, anticipated outcomes, anticipated results, and recommendations supported by sufficient sources to write a dissertation. The course will help students to write the first draft of their dissertation proposal to be revised and fine-tuned further in the dissertation process. Topics covered include: identifying a relevant research problem, articulating clear research questions or hypotheses, and applying appropriate theories in ISC, and building an argument to support the purpose and significance of the study. Methodological approaches are not the focus of this course. The major deliverable for the course is the dissertation proposal that will serve the basis for the first two chapters of the dissertation: Introduction and Literature Review. Throughout the course, students refine their ideas by writing and presenting them to peers and faculty at Colloquium Seminar II in the Fall 2 term. The course also provides a review of APA format.

**Spring 1 Term (11 credits)**

**ISCM 8140 Information Design and Human Communications (3 credits).**

This course introduces human-centered designs of information and communication systems that have fundamentally changed the way humans communicate, socialize, and work today. By using relationship and crisis management theories, students explore ways in which reputation management that is grounded on the foundational concepts of audience, ethical communication, and decoding and encoding of information, may provide ethical grounds for human-centered computing, value sensitive design, and the use of IT intelligence to cherish life on Earth rather than lead to self-destruction. Additionally, the course covers the following topics: digital strategies, behavioral modeling, reputation

management, reputation repair strategies, and digital and media contexts.

**ISCM 8150 Theory Development and Knowledge Management (3 credits).**

The course covers concepts of knowledge creation and acquisition, knowledge generation, and concepts of knowledge representation or codification, as well as the use of knowledge in information systems and communication research. The course also provides advanced knowledge in theory development and practice. It discusses the approaches to achieve rigor and relevance in solving a scientific and real-life problem in ISC. It focuses on how to create and manage knowledge by providing both a solid overview of various theoretical modeling techniques and the application of these techniques in ISC study and research. Students develop the skills to build a theory, and specify a model with the understanding of the importance of achieving correspondence within research design, literature review, theoretical arguments, and model specification.

**ISCM 8160 Rhetorical, Semiotic and Ethno-cultural Foundations of Information Transfer and Communications (3 credits).**

This course focuses on the complex relationships among information systems, and human communications and behaviors. By using rhetorical, semiotic and ethnographic approaches this course describes and analyzes systems of meanings, contextualizes information systems or informational situations, and grounds for informing actions and objects. The course explores four major questions: (1) What are the ethno-cultural, sociological, and psychological effects of the rapid development of technological innovations historically on information systems and communications for decision-making and problem solving? (2) What are the implications of living in a culture that values technology as a solution to most of its problems for digital natives and digital immigrants? (3) How does rhetoric, semiotics and ethnography clarify the technology-human communication interface and provide a foundation for systems of meanings for different generations in multicultural settings? (4) How and what do humans communicate in face-to-face and mediated communications? Topics include: situated rhetoric, ethno-cultural analysis and semiotics as a bridge between rhetoric and ethnography, hate speech leading to hate acts (speech act theory), language and action affairs, and frames and semantic (meaningful) structures.

**ISCM 9100 Dissertation I – Research Topic Development (2 credits).**

This course is designed to help students to work on the further development of their dissertation topics in collaboration with their newly selected dissertation advisors along with other dissertation committee members. The course provides hybrid-learning platforms via face-to-face, synchronous, and online faculty-doctoral student meetings, strategies to assist writers in working and finalizing the problem statements, research questions and related components of the Research Process paper from ISCM 8130. The dissertation advisors are expected to spend 28 contact or teaching hours with their dissertation advisees for the duration of this course. For more details about the responsibilities of the dissertation advisor, see the Student/Faculty Handbook, 2B. The Dissertation Committee and Advisor and 2C. Responsibilities of the Dissertation Committee Members.

**Summer 1 Term (3 credits)**

**ISCM 9200 Dissertation II – Literature Search (online course) (3 credits).**

This online course prepares students to learn how to write a literature review for selected sources that were previously developed in the Research Process paper from ISCM 8130 course. The outcome of this course's final paper will serve as the first draft of the dissertation Chapter 2: Literature Review. Students will learn to search and critique the literature, writing a literature review, and integrating interdisciplinary research results or findings. The major deliverables for the course include (1) the search and selection of relevant literature that provide sufficient sources to study the dissertation proposal topic (the scope), (2) learning how to engage in intellectual debates with various authors on the selected topic, (3) identifying and using primary sources for the literature review, (4) discussing the validity and reliability of sources and providing rationale for the selected sources, (5) and discussing

the limitations of the selected sources.

## **YEAR TWO (21 credits)**

### **Fall 2 Term (10 credits)**

#### **ISCM 8020 Colloquium Seminar II (1 credit).**

This colloquium seminar gives students opportunities to present their initial dissertation proposal and the literature search to receive constructive feedback from their peers for possible focus and/or change of research topic and/or literature search. Students learn how to turn the literature search into a Literature Review document.

#### **ISCM 8210 Advanced Research Design for Information Systems and Communications (3 credits).**

This 2nd year course provides students with the knowledge and guidance to prepare a methodology chapter for their dissertation and to become researchers in information systems and communications. Students explore typical, current, and emerging research designs relevant to the field, while gaining a depth of understanding in specific approaches that can be used for their own dissertation research. The course enables students to write and argue for a study methodology including sections focused on research design and process, sampling, instrumentation, data collection procedures, data analysis, limitations, and research ethics. Students learn to critically examine the methodologies of published studies, their peers' proposals, and their own proposals to identify assumptions, examine suitability of approaches, and ensure the soundness of research. Through iterative cycles of writing, presenting, and feedback with the instructors, advisors, and peers as the audience, students refine their methodology chapters in preparation for their dissertation proposal defense.

#### **ISCM 8220 Data Analytics: Managerial Perspectives (3 credits).**

This research course introduces theories, concepts, techniques and applications of data analytics - a managerial approach to data collection, data analysis to support a wide variety of management tasks and decision-making, from performance evaluation to trend spotting and policy-making. Students explore various systems for data analysis such as multivariate data analysis, data mining (web and text mining), data warehousing for information use and transfer, cloud computing, and crowdsourcing in order to create data-based or knowledge-based and decision support systems for personal and organizational decision making. Topics include descriptive analytics and statistical modeling, predictive analytics, large-scale data analytics, prescriptive analytics, operations analytics, data models and analytics in communication, data governance, metadata analysis, multimedia analytics, and big data analytics, and how to deal with limitations of big data and data analytics. Future trends and emerging technologies are introduced that may impact analytics, and decision support.

#### **ISCM 8230 Quantitative Research Methods I for ISC (3 credits).**

This course provides students with practice using quantitative methods to evaluate, adapt, improve, or verify the effectiveness of information or communications systems and technology in an organizational or other social setting. As such, the course surveys traditional social science research methodologies—survey methods, experiments, content analysis, and evaluation research and examines their application in today's research environment. Course includes readings and discussions, demonstrations, case analysis, analysis of archival data, panel and individual presentations.

### **Spring 2 Term (8 credits)**

#### **ISCM 8240 Qualitative Research Methods for ISC (3 credits).**

This course explores qualitative research theories, such as grounded theory, ethnography, discourse analysis, and rhetorical criticism, and analysis techniques to interpret qualitative data collected through data collection methods such as participant observation (emic and etic approaches);

individual interviews; focus groups; case studies; document analysis (e.g., library sources and digital databases); action research; longitudinal studies; narrative and discourse approaches; and in-depth interview methods by utilizing rhetorical and ethnographical symbolic interpretations (Qualitative I). The course also introduces data collection tools such as qualitative surveys, web-based questionnaires, and interview questions. It teaches how to design a qualitative research project for a specific context; how to collect data and analyze it; distinguish primary and secondary sources; credible or misleading sources and how they impact the validity and reliability of data; and minimize the observer's or the researcher's personal bias. It also introduces software available for qualitative data analysis. The course addresses ethical issues in conducting qualitative research (Qualitative II).

**ISCM 8250 Quantitative Research Methods II ISC (3 credits).**

The goal of this course is to introduce the advanced statistical methods such as ANOVA, ANCOVA or regression analysis. The course is designed to give a thorough overview of each method and the examples of the studies where this method can or cannot be applied. The students will continue learning the concepts of quantitative analysis by defining and calculating correlations, variance, covariance, and other concepts. The students will enhance their knowledge of sampling by working with groups and interpreting the between-group and within-group effects. They will use SPSS and other tools to prepare the data, run the tests and interpret the test results. Finally, the students will use their knowledge of quantitative methods both in designing their own research and in reviewing the research methodology used by others.

**ISCM 9300 Dissertation III – Dissertation Proposal Completion & Defense (2 credits).**

This course is designed to help students to work on the final version of their Dissertation Proposal under the supervision of their dissertation advisors. The course provides hybrid-learning platforms via face-to-face, synchronous, and online faculty-doctoral student meetings, strategies to assist writers in revising and editing their Dissertation Proposal for a formal defense. The dissertation advisors are expected to spend 28 contact or teaching hours with their dissertation advisees for the duration of this course. For more details about the responsibilities of the dissertation advisor, see the Student/Faculty Handbook, 2B. The Dissertation Committee and Advisor and 2C. Responsibilities of the Dissertation Committee Members.

**Summer 2 Term (3 credits)**

**ISCM 9400 Dissertation IV – Data Collection (online course) (3 credits).**

This online course is designed to enable students to understand and apply research methods drawn from Communications and Information Systems methodologies, for collecting data to answer research questions or test proposed hypotheses. The course includes instruction on data collections procedures for both qualitative and quantitative methods in order to construct feasible and purposeful research designs and outcomes. The primary focus is on methods most appropriate for students' needs, but a range of methods will be reiterated and covered in the following methodology courses: ISCM 8130 Introduction to Research Process for ISC, ISCM 8150 Advanced Research Design for ISC, ISCM 8240 Qualitative Research Methods for ISC, ISCM 8230 Quantitative Research Methods I for ISC, and 8250 Quantitative Research Methods II for ISC. Ethical issues in research are reinforced, and researcher assumptions, personal bias, and design limitations are addressed. The aim is to prepare students for writing Chapter 3: Methodology and finish data collection.

**YEAR THREE (15 credits)**

**Fall 3 Term (10 credits)**

**ISCM 8030 Colloquium Seminar III (1 credit).**

This colloquium seminar gives students the opportunity in the third-year cohort to present their progress on research to receive constructive feedback from their peers for possible improvement.

**ISCM 8310 Economics of Information Systems and Technology in the Digital Age (3 credits).**

This course focuses on examining and managing the increased complications of defining costs and benefits under a sense of urgency in making decisions about information technology (IT) investments and their competitive implications and impacts on the organizational structure, business performance, and organizational costs. The course overviews the core concepts of the economics of information systems (IS) and contemporary themes and research topics. Students are introduced to commonly used methodologies of the economics of IS such as econometrics, analytical models, cost-benefit analysis, supply and demand, experiments, and system net benefits. The course also introduces the economics of digitization, economic modeling, electronic marketing, information economics, and the economics of information.

**ISCM 8320 Information Security and the Law (3 credits).**

This course enables students to research legal and security issues and challenges that individuals, organizations, and communities face in today's cyber space. Current and emerging technologies and their impact on the changes and rapid expansion of state and federal laws will be examined in the context of the increasing cybercrimes and cyberwarfare such as identity theft, fraud, software hackings, cyber-attacks on organizational and governmental properties by foreign hackers, property rights violations, online stalking, plagiarism, bullying, sexual harassment, threats, and the dark web propaganda of misinformation and disinformation services. How to defend and prevent one's privacy and security in the digital age are explored. The course covers the following topics: information security; cybersecurity law, policy & management; IoT security & privacy; application security; cybersecurity defense; computer & software security; digital ethics, free speech vs. hate speech, and human behavior-based security.

**ISCM 9500 Dissertation V – Data Analysis (3 credits).**

This course is designed to help students focus on issues of data analysis for their individual doctoral projects. The course provides hybrid-learning platforms via face-to-face, synchronous, and online faculty-doctoral candidate meetings, strategies to assist writers in organizing and analyzing their data and completing the Chapter 4: Results / Findings. The dissertation advisors are expected to spend 42 contact or teaching hours with their dissertation advisees during the duration of this course. For more details about the responsibilities of the dissertation advisor, see the Student/Faculty Handbook, 2B. The Dissertation Committee and Advisor and 2C. Responsibilities of the Dissertation Committee Members.

**Spring 3 Term (5 credits)**

**ISCM 8330 Contemporary Issues in Information Systems and Communications (3 credits).**

This course explores contemporary issues and topics in Information Systems and Communication. New disruptive technologies such as artificial intelligence (AI), the Internet of Things (IoT), cloud computing, automation, genetic engineering, quantum computing, and 3D printing, known as the Fourth Industrial Revolution, clouded the physical, virtual, and biological boundaries of the world by opening new horizons for forecasting and strategizing human health, finances, and social services. Issues or topics for this course are selected from the following professional association websites:

- Association for Information Systems

<https://aisnet.org/page/AISSIGs>

A sample list of topics below is taken from the AIS interest group:

- Adoption and Diffusion of Information Technology
- Artificial Intelligence and Autonomous Applications
- Big Data Application Process
- Cross-Cultural Research in Information Systems
- Digital Innovation, Transformation, & Entrepreneurship
- Decision Support and Analytics
- Game Design and Research

- Human-Computer Interaction
- Academy of Management - Organizational Communication & Information Systems: A Division of AOM

<https://ocis.aom.org/home>

- National Communication Association

<https://www.natcom.org>

- Select most recent articles/publications on contemporary issues or topics in ISC for class discussions and explorations.

**ISCM 9600 Dissertation VI – Dissertation Completion & Defense (2 credits).**

This course is designed primarily to provide assistance to doctoral candidates as they move through the process of drafting and completing their dissertations. The course provides hybrid-learning platforms via face-to-face, synchronous, and online faculty-doctoral candidate meetings, strategies to assist writers in completing the Chapter 5: Discussion, organizing and editing the entire manuscript, and preparing it for final defense and publication. The dissertation advisors are expected to spend 28 contact or teaching hours with their dissertation advisees during the duration of this course. For more details about the responsibilities of the dissertation advisor, see the Student/Faculty Handbook, 2B. The Dissertation Committee and Advisor and 2C. Responsibilities of the Dissertation Committee Members.