

INFORMATION SYSTEMS



Haesun K. Lee, Ph.D.
Assistant Professor

Dr. Haesun K. Lee is an Assistant Professor of Computer Science. She received her Ph.D. degree from Illinois Institute of Technology, Chicago, Illinois (1997). Her primary research interest is on Real Time Systems with particular emphasis on the scheduling real-time tasks with reduced context switches. Dr. Lee has published numerous research papers in many refereed conference proceedings of the international computer science conferences sponsored by the well known professional societies such as IEEE, ACM, and ISCA. Her work also appears in the Journal of Computational Methods in Science and Engineering. Her recognitions include the 2006 Chancellor's Council Outstanding Teacher Award.

Ilhyun Lee, Ph. D.
Assistant Professor

Dr. Ilhyun Lee is an Assistant Professor of Computer Science. He received his Ph.D. degree from Illinois Institute of Technology, Chicago, Illinois (1996). He was selected as Who's Who Among America's Teachers in 2006. His research interests include developing an Object-Oriented Scheduler in real-time environments. His research results have been published in the Journal of Computational Methods in Science and Engineering, and many refereed conference proceedings of the international computer science conferences sponsored by the well known professional societies such as IEEE, ACM, and ISCA.



Administered by the Department of Mathematical and Computing Sciences within the College of Arts and Sciences.

The overall goal of the Information Systems program is to provide its graduates with basic information systems and computing skills. This much is in common with computer science, though the computing skill set is somewhat different. The program is distinguished from computer science in that it provides a very strong background in business skills, including an emphasis on how information systems fit into a modern business organization.

Degree Requirements

The minimum total credits required for a Bachelor's of Science in Information Systems is **128**.

General Education

Students must complete the requirements shown in the General Education Requirements section on pages 63-64 of this catalog. The two courses in laboratory sciences (as part of the General Education Core) must form a two-course sequence. In addition to the basic requirements, students must complete a second literature course at the sophomore or junior level and the two capstone courses, NTSC 4301 and NTSC 4311. In some cases, specific courses must be selected to meet a particular general education requirement, for example, in mathematics. Please see below in the degree plan outline.

Computer Use

All majors must demonstrate a basic use of computer applications software through completion of COSC 1335 or its equivalent and of programming in Java through completion of COSC 1430 and COSC 2430.

Major Requirements

All students are expected to complete COSC 1335, 1430, and 2430 or their equivalents before beginning the upper level major courses. These courses introduce general computer concepts and applications and develop programming skills. Programming skills are broadened through the completion of a course in a second high-level programming language.

Foundation courses:

These courses include the general education core and additional foundational courses from the School of Business. It is recommended that the general education courses in English and mathematics and the business core courses in economics, accounting, and statistics be completed as soon as possible, since they are prerequisites for many major and minor program courses.

<u>General education core</u>	47 – 49 credits
ENGL 1301, 1302	6
HIST 1301, 1302	6
PLSC 2305, 2306	6
ENGL 23xx, 23xx or 33xx or SPAN 3xxx, 4xxx	6
Laboratory Science 1, 2	8
ARTS	3
COMMUNICATION	3
ECON 2301	3
MATH 1324 and 1325 or MATH 2413 and 2414	6-8

<u>Business Core</u>	18 credits
ACCT 2301, 2302	6
ECON 2302	3
MNGT 2301, 3302	6
MNGT 3340	3

Required courses:

These courses are the heart of the information systems program. They include the major program, the minor program, and the capstone experience.

The major program **34 – 35 credits**

All information systems majors take a common set of foundational computer and information systems courses:

COSC 1335	3
COSC 1430, 2430	8
COSC 2420	4
COSC 3310	3
COSC 3315	3
COSC 4415	4
ACCT 4311	3

Two elective courses from among:

COSC 3360	3
COSC 4335	3
COSC 4455	4
COSC 4460	4
COSC 4370	3
ACCT 3338	3

The minor program **12 credits**

All information systems majors have in common the minor in general business which, combined with the business core, provides a solid foundation in business management:

MNGT 3310	3
MRKT 3300	3
FINA 3320	3
ACCT 3310	3

Capstone courses

6 credits

All information systems majors share a capstone experience with all other science and mathematics majors:

NTSC 4301	3
NTSC 4311	3
Total lower division credits	74 - 76
Total upper division credits	43 - 44

Courses freely elected

Upper level courses sufficient to satisfy the requirement of at least 54 upper level credits must be elected. The elective hours will range from 10 to 11 credits.

TOTAL CREDITS 128 - 130

No more than 53 hours in any combination of computer science and information systems courses may be applied toward the 128 semester hour minimum requirement for a degree.

Information Systems as a Minor

Because of its dependence on business courses as an integral part of the curriculum, there is no minor in information systems. Students wishing to minor in a computing and information systems related area should consider the minor in computer science.

TExES Requirements

Candidates for TExES tests in information systems must complete the courses listed below or equivalent courses as approved by an information systems advisor.

COSC 1335 Computers and Problem Solving	3
COSC 1430 Introduction to Computer Science I	4
COSC 2430 Introduction to Computer Science II	4
COSC 2420 C Programming	3/4
or another course in a high level language approved by the advisor	
COSC 3310 Digital Computer Organization	3
COSC 3315 Information Systems Design	3
COSC 4415 Database Systems	4
ACCT 4311 Information Systems Theory and Analysis	3

TOTAL CREDITS 27/28

Relationship of Information Systems and Computer Science

It is not possible to double major in information systems and in computer science or to major in information systems and minor in computer science or vice-versa. Students interested in the computer science major with an information systems emphasis may elect to complete the computer science major while completing the essential business core for information systems. This option requires that the mathematics taken follow the requirements of the computer science program and that the general business minor be completed. Interested students should consult with a computer science advisor as early in the program as possible.

Course Listing

COSC 1335 Computers and Problem Solving (3)

Introduction to basic issues related to computer aided problem solving. Computational problems will be studied using software packages, including spreadsheets and database systems. Use of the Internet and the World Wide Web as problem solving resources is included. Basics of computer systems will be introduced. Same as Business Field of Study course COSC/BCIS 1305. Prerequisite: college algebra or equivalent. F,S

COSC 1430 Introduction to Computer Science I (4)

Computer organization, algorithm design, programming, and elementary data structures. Introduction to programming in a high-level language. Prerequisite or corequisite: MATH 1332 or 1324 or 2412 or equivalent. F,S

COSC 2420 C Programming (4)

Programming in C, investigating the characteristics and implementation. Prerequisite: COSC 1430. S

COSC 2430 Introduction to Computer Science II (4)

Continuation of COSC 1430. Data structures, data abstraction, information hiding. Advanced programming in the language of the current COSC 1430. Prerequisite COSC 1430. F,S

COSC 3310 Digital Computer Organization (3)

Design of arithmetic, control and memory units, binary data representation, error-detecting and error-correcting codes. Prerequisite: COSC 2430. F

COSC 3315 Information Systems Design (3)

Computer systems and relationships between hardware and software components. Emphasis on business system design and analysis. Prerequisite: COSC 2430. S

COSC 3360 Computer Ethics (3)

An introduction to the responsibilities generally and the ethical behavior specifically expected of the computer and information systems professional. Includes the philosophical bases of ethical decision-making and the application of these principles to issues that arise in computing and information systems. Discussion of ethical standards as established by governmental bodies and professional organizations. Prerequisite: COSC 3315.

COSC 4335 Distributed Information Systems (3)

Study of network-based information systems, including distributed database systems. Prerequisite: COSC 4415

COSC 4370 Data Communications (3)

Theory and techniques related to signal transmission, transmission media, signal encoding, interfacing, data link control and protocols. Prerequisites: COSC 3310 and permission of the instructor.

COSC 4415 Database Systems (4)

Introduction to database design and implementation using the ER model. Relational model concepts, constraints and relational algebra. Normalization, optimization and concurrency. Prerequisite: COSC 3315

COSC 4455 Multimedia and Web Development (3)

Use of software development tools for construction of multimedia and Web pages, including an introduction to HTML and XML. Students will utilize industry standard tools for processing graphics, animation, audio, and video. Prerequisite: COSC 3315

COSC 4460 Software Engineering (4)

Fundamental concepts and general principles for software systems development. Visual modeling, software development life cycle, CASE tools, Web-based information systems. Prerequisite: COSC 3315 F

ACCT 3338 Information Systems Applications (3)

Emphasizes the use of database technology as an information resource tool for managers. Students participate in a comprehensive project using knowledge, skills, and abilities acquired. Prerequisite: ACCT 3333. S

ACCT 4311 Accounting Information Systems (3)

A systems approach to evaluate, plan, and implement accounting information systems. Includes the analysis of and use of appropriate technology. Prerequisites: ACCT 3301 or ACCT 3310 and ACCT 3333 (MNGT 3333) or COSC 3315

2007-2009 DEGREE PLAN: BS IN INFORMATION SYSTEMS

	Date	Credits	Grade		Date	Credits	Grade
Gen Ed Core				Major			
ENGL 1301		3		COSC 1335		3	
ENGL 1302		3		COSC 1430		4	
HIST 1301		3		COSC 2430		4	
HIST 1302		3		COSC 2420		4	
PLSC 2305		3		COSC 3310		3	
PLSC 2306		3		COSC 3315		3	
				COSC 4415		4	
ENGL 23xx		3		ACCT 4311		3	
ENGL 23xx or 33xx		3					
COMM 1315		3		Two of: COSC 3360, 4335, 4455, 4460, 4370, ACCT 3338		3 or 4	
ECON 2301		3					
MATH 1324 or 2413		3 or 4					
MATH 1325 or 2414		3 or 4					
ARTS		3					
SCI w/ LAB, I		4		Minor			
SCI w/ LAB, II		4		MNGT 3310		3	
				MRKT 3300		3	
Business Core				FINA 3320		3	
ACCT 2301		3		ACCT 3310		3	
ACCT 2302		3					
ECON 2302		3		Electives			
MNGT 2301		3					
MNGT 3302		3					
MNGT 3340		3					
Capstone Courses							
NTSC 4301		3					
NTSC 4311		3					