

# MAJOR IN INFORMATION SYSTEMS

The Information Systems major requires 65-68 units to be earned with a grade equivalent of 2.00 or higher. A minimum of 30 major units must be taken at Towson University.

## Career Track

Each Information Systems student must choose from one of four career tracks in Information Systems. The career tracks help focus a student's course work around a real world career goal. The four current career tracks are in:

- **Systems:** This track prepares students in conceptualizing and developing robust and reliable information systems with a focus on key technical skills in information system analysis, design and development.
- **Business:** This track prepares students in integrating technology with business processes and strategies, focusing on business comprehension, core enterprise functions and the technological challenges in a multitude of businesses.
- **Interface Design:** This track prepares students in incorporating design and cognition into technology development with a focus on building screen interface layouts and physical devices that are appropriate for specific users, tasks and environments.
- **e-Government:** This track prepares students in understanding the government and public policy contexts, to leverage technology in providing online government services.

If a student wants to pursue a customized career track specific to their career goal, different from the four already offered, this requires prior, written approval of the Director of the Information Systems program. Please note: students who were admitted under previous course catalogs may have different course requirements.

Code	Title	Units
<b>Required IS Courses</b> <sup>1</sup>		
CIS 211	FUNDAMENTALS OF INFORMATION SYSTEMS & TECHNOLOGY	3
CIS 239	ENTERPRISE SYSTEMS AND ARCHITECTURE	3
CIS 350	TELECOMMUNICATIONS	3
CIS 379	SYSTEMS ANALYSIS AND DESIGN	3
CIS 435	HUMAN-COMPUTER INTERACTION	3
CIS 458	ORGANIZATIONAL DATABASE MANAGEMENT	3
CIS 479	SOFTWARE PROJECT MNGT	3
COSC 236	INTRODUCTION TO COMPUTER SCIENCE I	4
COSC 237	INTRODUCTION TO COMPUTER SCIENCE II	4
COSC 418	ETHICAL AND SOCIETAL CONCERNS OF COMPUTER SCIENTISTS	3
ITEC 231	FUNDAMENTALS OF WEB TECHNOLOGIES	3
<b>Capstone</b>		
CIS 475	INFORMATION SYSTEMS CAPSTONE	3
<b>Required MATH Courses</b>		
MATH 211	CALCULUS FOR APPLICATIONS	3-4
or MATH 273	CALCULUS I	
MATH 231	BASIC STATISTICS	3-4

or MATH 330	INTRODUCTION TO STATISTICAL METHODS	
MATH 263	DISCRETE MATHEMATICS	3
<b>Other Requirements</b>		
Must be completed with a grade equivalent of 2.00 or higher.		
ENGL 317	WRITING FOR BUSINESS AND INDUSTRY (Core 9)	3
Total Units		50-52

<sup>1</sup> cannot apply both CIS 475 and COSC 484 toward major.

## Career Track Required Courses

In addition to the courses required for the major, students must complete the courses required for one of four career tracks: Systems Track, Business Track, Interface Design Track or E-Government Track.

Code	Title	Units
<b>Systems Track</b>		
COSC 336	DATA STRUCTURES AND ALGORITHM ANALYSIS	4
COSC 412	SOFTWARE ENGINEERING	3
COSC 436	OBJECT-ORIENTED DESIGN & PROGRAMMING	3
COSC 484	WEB-BASED PROGRAM	3
CIS 440	SYSTEM DEVELOPMENT / E-COMMERCE	3
Select two of the following:		6
CIS 212	INTRO TO BUSINESS PROG	
or CIS 265	VISUAL BASIC PROGRAMMING	
CIS 377	INFORMATION SYSTEMS SECURITY	
CIS 397	INTERNSHIP IN CIS	
CIS 425	DECISION SUPPORT SYSTEMS	
CIS 426	GAMING INTERFACE DESIGN	
CIS 433	SELECT TOPICS INFO SYST	
CIS 468	APPLIED DATA MINING AND VISUAL ANALYTICS	
CIS 495	INDEPENDENT STUDY IN COMPUTER INFORMATION SYSTEMS	
ITEC 345	SCRIPTING LANGUAGES	
ITEC 423	EMERGING INTERNET TECHNOLOGIES	
ITEC 427	CLOUD COMPUTING FOR ENTERPRISES	
Total Units		22

Code	Title	Units
<b>Business Track</b>		
ACCT 201	PRINCIPLES OF FINANCIAL ACCOUNTING	3
CIS 334	DATA ORGANIZATION	3
ECON 201	MICROECONOMIC PRINCIPLES	3
Select two of the following:		6
CIS 377	INFORMATION SYSTEMS SECURITY	
CIS 397	INTERNSHIP IN CIS	
CIS 426	GAMING INTERFACE DESIGN	
CIS 433	SELECT TOPICS INFO SYST	
CIS 440	SYSTEM DEVELOPMENT / E-COMMERCE	
CIS 468	APPLIED DATA MINING AND VISUAL ANALYTICS	
CIS 495	INDEPENDENT STUDY IN COMPUTER INFORMATION SYSTEMS	
ITEC 427	CLOUD COMPUTING FOR ENTERPRISES	
Select one of the following course pairs:		6

ACCT 202 & ACCT 301	PRINCIPLES OF MANAGERIAL ACCOUNTING and INTERMEDIATE ACCOUNTING I	
ACCT 202 & ACCT 341	PRINCIPLES OF MANAGERIAL ACCOUNTING and MANAGEMENT ACCOUNTING I	
EBTM 365 & EBTM 419	PRINCIPLES OF OPERATIONS MANAGEMENT and SUPPLY-CHAIN MANAGEMENT	
EBTM 365 & EBTM 454	PRINCIPLES OF OPERATIONS MANAGEMENT and BUSINESS PROCESS MANAGEMENT	
HLTH 207 & HCMN 305	HEALTH CARE IN THE U.S. and HEALTH ADMINISTRATION	
MKTG 341 & MNGT 361	PRINCIPLES OF MARKETING and LEADERSHIP AND MANAGEMENT	
MNGT 361 & MNGT 395	LEADERSHIP AND MANAGEMENT and MANAGEMENT OF ORGANIZATIONAL BEHAVIOR	
<b>Total Units</b>		<b>21</b>

Code	Title	Units
<b>Interface Design Track</b>		
ART 103	2D PROCESS	3
ART 217	DIGITAL CONCEPTS: IMAGE AND SURFACE	3
CIS 334	DATA ORGANIZATION	3
CIS 445	UNIVERSAL USABILITY: DESIGNING COMPUTER INTERFACES FOR BLIND USERS	3
CIS 468	APPLIED DATA MINING AND VISUAL ANALYTICS	3
Select two of the following:		6
ART 365	DESIGN FOR THE WWW	
CIS 377	INFORMATION SYSTEMS SECURITY	
CIS 397	INTERNSHIP IN CIS	
CIS 425	DECISION SUPPORT SYSTEMS	
CIS 426	GAMING INTERFACE DESIGN	
CIS 433	SELECT TOPICS INFO SYST	
CIS 436	E-GOVERNMENT	
CIS 495	INDEPENDENT STUDY IN COMPUTER INFORMATION SYSTEMS	
DFST 101	INTRODUCTION TO DEAF STUDIES	
OCTH 211	PHILOSOPHY OF OCCUPATIONAL THERAPY	
<b>Total Units</b>		<b>21</b>

Code	Title	Units
<b>E-Government Track</b>		
CIS 334	DATA ORGANIZATION	3
CIS 436	E-GOVERNMENT	3
ITEC 336	LEGAL AND POLICY ISSUES IN INFORMATION TECHNOLOGY	3
POSC 103	AMERICAN NATIONAL GOVERNMENT	3
POSC 207	STATE GOVERNMENT	3
Select two of the following:		6
CIS 377	INFORMATION SYSTEMS SECURITY	
CIS 397	INTERNSHIP IN CIS	
CIS 433	SELECT TOPICS INFO SYST	
CIS 425	DECISION SUPPORT SYSTEMS	
CIS 445	UNIVERSAL USABILITY: DESIGNING COMPUTER INTERFACES FOR BLIND USERS	

CIS 495	INDEPENDENT STUDY IN COMPUTER INFORMATION SYSTEMS	
POSC 375	PUBLIC ADMINISTRATION	
<b>Total Units</b>		<b>21</b>

## Systems Track Suggested Four-Year Plan

Based on course availability and student needs and preferences, the selected sequences will probably vary from those presented below. Students should consult with their adviser to make the most appropriate elective choices.

### Freshman

Term 1	Units	Term 2	Units
COSC 111	3	CIS 211	3
MATH 119 (optional - see footnote) <sup>1</sup>	4	COSC 236	4
Core 1 (or Core 2)	3	MATH 263 (Core 3)	3
Core 4	3	MATH 273	4
Core 5	3	Core 2 (or Core 1)	3
		<b>16</b>	<b>17</b>

### Sophomore

Term 1	Units	Term 2	Units
CIS 239	3	CIS 379	3
COSC 237	4	COSC 336	4
ENGL 317 (Core 9)	3	COSC 418	3
ITEC 231	3	MATH 231 or 330	3-4
MATH 274	4	Core 6	3
		<b>17</b>	<b>16-17</b>

### Junior

Term 1	Units	Term 2	Units
CIS 350	3	CIS 479	3
CIS 435	3	COSC 436	3
CIS 458	3	COSC 484	3
COSC 412	3	Core 8	4
Core 7	4		
		<b>16</b>	<b>13</b>

### Senior

Term 1	Units	Term 2	Units
CIS 440	3	CIS 475	3
Core 10	3	Core 12	3
Core 11	3	Core 13	3
Elective (from CIS / ITEC List)	3	Core 14	3
Elective (from CIS / ITEC List)	3	Elective	3
		<b>15</b>	<b>15</b>

Total Units 125-126

<sup>1</sup> Prerequisite for MATH 273: qualifying score on Math Placement exam or MATH 119.

## Business Track Suggested Four-Year Plan

Based on course availability and student needs and preferences, the selected sequences will probably vary from those presented below.

Students should consult with their adviser to make the most appropriate elective choices.

Freshman		
Term 1	Units Term 2	Units
ACCT 201	3 CIS 211	3
COSC 111	3 COSC 236	4
ECON 201	3 MATH 263 (Core 3)	3
Core 1 (or Core 2)	3 Core 2 (or Core 1)	3
Core 4	3 Core 5	3
15		16

Sophomore		
Term 1	Units Term 2	Units
CIS 239	3 CIS 334	3
COSC 237	4 CIS 379	3
ENGL 317 (Core 9)	3 COSC 336	4
ITEC 231	3 COSC 418	3
MATH 273 or 211	3-4 MATH 231 or 330	3-4
16-17		16-17

Junior		
Term 1	Units Term 2	Units
CIS 350	3 CIS 479	3
CIS 435	3 Core 8	4
CIS 458	3 Core 6	3
Core 7	4 Elective (from CIS/ITEC list)	3
Elective (from CIS/ITEC list)	3 Elective	3
16		16

Senior		
Term 1	Units Term 2	Units
Core 10	3 CIS 475	3
Core 11	3 Core 13	3
Core 12	3 Core 14	3
Elective (1 of 2 from Course Pair List)	3 Elective	3
	Elective (2 of 2 from Course Pair List)	3
12		15

Total Units 122-124

## Interface Design Track Suggested Four-Year Plan

Based on course availability and student needs and preferences, the selected sequences will probably vary from those presented below. Students should consult with their adviser to make the most appropriate elective choices.

Freshman		
Term 1	Units Term 2	Units
ART 103	3 ART 217	3
COSC 111	3 CIS 211	3
Core 1 (or Core 2)	3 COSC 236	4
Core 4	3 MATH 263 (Core 3)	3

Core 5	3 Core 2 (or Core 1)	3
15		16

Sophomore		
Term 1	Units Term 2	Units
CIS 239	3 CIS 334	3
COSC 237	4 CIS 379	3
ENGL 317 (Core 9)	3 COSC 336	4
ITEC 231	3 COSC 418	3
MATH 273 or 211	3-4 MATH 231 or 330	3-4
16-17		16-17

Junior		
Term 1	Units Term 2	Units
CIS 350	3 CIS 445	3
CIS 435	3 CIS 479	3
CIS 458	3 Core 6	3
Core 7	4 Core 8	4
Elective	3 Elective	3
16		16

Senior		
Term 1	Units Term 2	Units
CIS 468	3 CIS 475	3
Core 10	3 Core 11	3
Elective (from approved list)	3 Core 12	3
Elective (from approved list)	3 Core 13	3
	Core 14	3
12		15

Total Units 122-124

## E-Government Track Suggested Four-Year Plan

Based on course availability and student needs and preferences, the selected sequences will probably vary from those presented below. Students should consult with their adviser to make the most appropriate elective choices.

Freshman		
Term 1	Units Term 2	Units
COSC 111	3 CIS 211	3
POSC 103	3 COSC 236	4
Core 1 (or Core 2)	3 MATH 263 (Core 3)	3
Core 4	3 POSC 207	3
Core 5	3 Core 2 (or Core 1)	3
15		16

Sophomore		
Term 1	Units Term 2	Units
CIS 239	3 CIS 334	3
COSC 237	4 CIS 379	3
ENGL 317 (Core 9)	3 COSC 336	4
ITEC 231	3 COSC 418	3
MATH 273 or 211	3-4 MATH 231 or 330	3-4
16-17		16-17

<b>Junior</b>		
<b>Term 1</b>	<b>Units Term 2</b>	<b>Units</b>
CIS 350	3 CIS 479	3
CIS 435	3 COSC 436	3
CIS 458	3 Core 8	4
Core 7	4 Core 14	3
Core 13	3 Elective	3
	16	16

<b>Senior</b>		
<b>Term 1</b>	<b>Units Term 2</b>	<b>Units</b>
ITEC 336	3 CIS 475	3
Core 6	3 Core 10	3
Elective	3 Core 11	3
Elective (from approved list)	3 Core 12	3
	Elective (from approved list)	3
	12	15

Total Units 122-124

1. Students can use their proficiency in information systems principles, practices and analytical techniques to solve a variety of problems.
2. Students can explain the technological, organizational, and behavioral principles that underlie information systems.
3. Students will understand the ethical and societal concerns and dilemmas facing information systems professionals and can formulate appropriate solutions and courses of action.
4. Students can work effectively in teams and communicate effectively.