

# Computer Information Systems — Planning Guide

2016-2017 Catalog

## SUGGESTED SEMESTER-BY-SEMESTER PLANNING GUIDE

(For listing of courses, see reverse of this sheet)

1 <sup>st</sup> Semester - First Year		2 <sup>nd</sup> Semester - First Year	
ENG 1010 MTH 1310 HIS ____ ____	Composing Arguments Finite Math for Mgmt & Soc Science History Natural and Physical Science Elective	ENG 1020 MTH 1320 ____	Freshman Comp: Analysis, Research & Doc. Calculus for Mgmt & Soc Sciences Natural and Physical Science Elective
PSY 1001 <i>or</i> SOC 1010	Introduction to Psychology <i>or</i> Introduction to Sociology	CAS 1010 <i>or</i> CAS 1710 PSC 1010 <i>or</i> PSC 1020	Public Speaking <i>or</i> Interpersonal Communication American Nat'l Government <i>or</i> Political Systems & Ideas
1 <sup>st</sup> Semester - Second Year		2 <sup>nd</sup> Semester - Second Year	
____ ECO 2010 ACC 2010 CIS 2010 MGT 2210	Elective Principles of Economics - Macro Principles of Accounting I Foundations of Information Systems Legal Environment of Business I	ECO 2020 ACC 2020 MKT 2040 CIS 2110 ____	Principles of Economics - Micro Principles of Accounting II Business Communication Structured Problem Solving in Information Systems Arts and Humanities
It is required that students meet with an advisor in their major to plan their remaining 60 credit hours. It is recommended that students begin with the business core course related to their major and adjust other business core courses accordingly. Department offices' will have suggested planning guides for their majors.			
1 <sup>st</sup> Semester - Third Year		2 <sup>nd</sup> Semester - Third Year	
CIS 3300 CIS 3050 CIS 3230 FIN 3300	Business Analytics I (Descriptive and Predictive) Fundamentals of Systems Analysis and Design Telecommunication Systems and Networking Managerial Finance	CIS 3320 MGT 3000 MKT 3000 CIS 3060 CIS 3500	Business Analytics II (Prescriptive) Organizational Management Principles of Marketing Database Management Systems Information Systems Security
PHI 3360 <i>or</i> PHI 1030	Business Ethics (preferred) <i>or</i> Ethics		
1 <sup>st</sup> Semester - Fourth Year		2 <sup>nd</sup> Semester - Fourth Year	
CIS 3145 CIS ____ CIS ____ ____ ____	Business Application Development CIS Elective CIS Elective Elective Elective	MGT 4950 CIS 4050 CIS ____ ____ ____	Strategic Management Systems Analysis and Design CIS Capstone Course Elective Elective

### General Studies:

All Business majors at Metropolitan State University of Denver (Metro) must complete the University's minimum requirement of 33 hours of general studies courses. The College of Business requires 9 additional specific hours of general education for a total of 43 (PSY 1001 or SOC 1010, PSC 1010 or PSC 1020, and MTH 1320 should be used to meet the College of Business requirements). Students desiring a Bachelor of Science degree from the College of Business should complete these courses as part of their first 60 credit hours. **The General Studies Written Communication, Oral Communication, and Quantitative Literacy courses (see other side) must be completed before enrolling in Business Core courses.**

### Multicultural Course:

The University's multicultural requirement may be satisfied by taking an approved multicultural course in general studies or electives portion of the degree requirement.

**GLOBAL DIVERSITY REQUIREMENT:** The University's global diversity requirement may be satisfied by taking an approved global diversity course listed in the University Catalog: *General Studies Requirements*.

### CIS 2010:

The prerequisite is CIS/CSS 1010 with a grade of C- or better, or appropriate score on the Computer Information Systems computer literacy screening test.

### Business Core Courses:

A grade of C- or better must be earned in each business core course to have that course count toward the Bachelor of Science degree.

### Upper Division Courses:

A student must complete at least 40 credit hours of upper-division courses (3000 or 4000 level) at Metro of which at least 8 hours must be in Computer Information Systems.

### College of Business Residency requirements:

To earn a Bachelor's degree in computer information systems, a student must successfully complete 30 or more credit hours of business course work at Metro. This 30-hour residency requirement can be met by completing any business courses with the prefix ACC, CIS, FIN, MGT and MKT except ACC 1010, CIS 1010, CIS 2300, CIS 3300, CIS 3320, CIS 3340, and FIN 2250.

**College of Business Advising: Administration Building, AD-540, 303-352-7270**

<http://www.msudenver.edu/business/advising/index.shtml>

CIS Department: Administration Building, AD-590, 303-556-3122

Contact: Chairman Dr. Abel Moreno, [morenoa@msudenver.edu](mailto:morenoa@msudenver.edu),

CIS Department Website: <http://cis.msudenver.edu>

**Computer Information Systems Checklist of Required Studies**

2016-2017

GENERAL STUDIES and REQUIRED NON-BUSINESS COURSES (minimum)

General Studies		Credits
<b>Written Communication</b>		
ENG 1010	Composing Arguments	3 _____
ENG 1020	Freshman Composition: Analysis, Research, & Documentation	3 _____
<b>Quantitative Literacy</b>		
MTH 1310	Finite Mathematics for the Management & Social Sciences ( <i>prerequisite: one and one-half years of high school algebra or equivalent and an appropriate score on the mathematics preassessment placement test</i> )	4 _____
<b>Oral Communication</b>		
CAS 1010	Public Speaking	3 _____
or CAS 1710	Interpersonal Communication	
<b>Historical</b>		
HIS _____	<i>Read the list of approved "Historical" courses in the General Studies courses list of your official catalog term)</i> <sup>1 or 2</sup>	3 _____
<b>Arts and Humanities</b>		
PHI 3360	Business Ethics (preferred course)	3 _____
or PHI 1030	Ethics	
	(Check catalog for Arts and Humanities elective) <sup>1 or 2</sup>	3 _____
<b>Social &amp; Behavioral Sciences I</b>		
ECO 2010	Principles of Economics–Macro ( <i>prerequisite: ENG 1010 or ENG 1020; and any 1000-level MTH course</i> )	3 _____
<b>Social &amp; Behavioral Sciences II</b>		
ECO 2020	Principles of Economics–Micro ( <i>prerequisite: ENG 1010 or ENG 1020; and any 1000-level MTH course</i> )	3 _____
<b>Natural and Physical Sciences</b>		
_____	(Check catalog for Natural and Physical Sciences elective) <sup>2</sup>	3 _____
_____	(Check catalog for Natural and Physical Sciences elective) <sup>2</sup>	3 _____
	<b>Total credit hours for General Studies (minimum)</b>	<b>34</b>

**Additional College of Business Requirements**

PSY 1001	Introductory Psychology	3 _____
or SOC 1010	Introduction to Sociology	
PSC 1010	American National Government	3 _____
or PSC 1020	Political Systems and Ideas	
MTH 1320	Calculus for the Management & Social Sciences ( <i>prerequisite: MTH 1310 w/C or better</i> )	3 _____
	<b>Total credit hours College of Business Requirements</b>	<b>9</b>
	<b>Total Non-business General Studies required credits (minimum)</b>	<b>43</b>

**Business Core (A grade of 'C' or better must be earned in each business core course to have that course count toward the Bachelors of Science degree in Computer Information Systems.) (prerequisite: Completion of all the "General Studies Written Communication, Oral Communication, and Quantitative Literacy courses)**

ACC 2010	Principles of Accounting I	3 _____
ACC 2020	Principles of Accounting II ( <i>prerequisite: ACC 2010 with a grade of C- or better</i> )	3 _____
CIS 2010	Foundations of Information Systems ( <i>prerequisite: CIS/CSS 1010 w/C- or better or appropriate score on Computer Information Systems Literacy screening test</i> )	3 _____
CIS 3300	Business Analytics I (Descriptive and Predictive) ( <i>prerequisite: C- or better in MTH 1320 or MTH 1410; CIS 2010 or CIS 2300; and at least junior standing</i> )	3 _____
MGT 2210	Legal Environment of Business I	3 _____
MKT 2040	Business Communication	3 _____
CIS 3320	Business Analytics II (Prescriptive) ( <i>prerequisite: C- or better in MTH 1320 or MTH 1410; CIS 3300; and at least junior standing</i> )	3 _____
FIN 3300	Managerial Finance ( <i>prerequisite: ACC 2010, ECO 2010, ECO 2020, MTH1320 or MTH 1410 with a grade of C- or better, and at least junior standing</i> )	3 _____
MGT 3000	Organizational Management ( <i>prerequisite: at least junior standing</i> )	3 _____
MKT 3000	Principles of Marketing ( <i>prerequisite: at least junior standing</i> )	3 _____
MGT 4950	Strategic Management ( <i>prerequisite: completion of all other business core courses and senior standing.</i> )	3 _____
	<b>Total credit hours for Business Core (minimum)</b>	<b>33</b>

**Course work in CIS Major**

CIS 2110	Structured Problem Solving in Information Systems ( <i>prerequisite: CIS 2010</i> )	3 _____
CIS 3050	Fundamentals of Systems Analysis and Design ( <i>prerequisite: CIS 2110</i> )	3 _____
CIS 3060	Database Management Systems ( <i>prerequisite: CIS 2110</i> )	3 _____
CIS 3145	Business Application Development ( <i>prerequisite: CIS 2110</i> )	3 _____
CIS 3230	Telecommunication Systems and Networking ( <i>prerequisite: CIS 2110</i> )	3 _____
CIS 3500	Information Systems Security ( <i>prerequisite: CIS 3230</i> )	3 _____
CIS 4050	Systems Analysis & Design ( <i>prerequisite: CIS 3050, CIS 3060, CIS 3145, CIS 3230, CIS 3500, and senior standing</i> )	3 _____

**CIS Approved Electives (Must be 3000 – 4000 level CIS Course) – Select TWO of the Following: \*\*\***

CIS 3030	Business Web Page Development ( <i>prerequisite: CIS 2110</i> )	
CIS 3220	Analysis of Hardware, Software, and User Interfaces for Microcomputer Platforms ( <i>prerequisite: CIS 2110</i> )	
CIS 3270	Advanced Computer Applications for Business ( <i>prerequisite: CIS 2010</i> )	
CIS 3280	LAN and WAN Systems for Business ( <i>prerequisite: CIS 3230</i> )	
CIS 3290	Operating Systems for End Users ( <i>prerequisite: CIS 2010 and CIS 2110</i> )	
CIS 3310	Business Forecasting Methods ( <i>prerequisite: CIS 3300 and junior standing</i> )	
CIS 3350	Knowledge Discovery and Data Mining ( <i>prerequisite: CIS 3300 and at least junior standing</i> )	
CIS 3460	Data Warehousing and Mining ( <i>prerequisite: CIS 3060 or ACC 3300, and CIS 3300</i> )	
CIS 3490	Managing Business Information with Enterprise Systems ( <i>prerequisite: CIS 2010</i> )	
CIS 3980	Internship in Computer Information Systems	3 _____
CIS 4xxx	Courses listed in the CIS Capstone Group.	3 _____

**CIS Capstone Group – Select ONE of the Following: \*\*\***

CIS 4030	Web Site Administration ( <i>prerequisite: CIS 3030</i> ) <b>OR</b>	
CIS 4060	Advanced Database Management Systems ( <i>prerequisite: CIS 3060 and CIS 3145</i> ) <b>OR</b>	
CIS 4160	Advanced Programming Seminar ( <i>prerequisite: CIS 3060 and CIS 3145</i> ) <b>OR</b>	
CIS 4260	Database Administration ( <i>prerequisite: CIS 3060</i> ) <b>OR</b>	
CIS 4280	Network Installation and Administration ( <i>prerequisite: CIS 3230</i> ) <b>OR</b>	
CIS 4281	Network Installation and Administration With UNIX/Linux ( <i>prerequisite: CIS 3230</i> ) <b>OR</b>	
CIS 4370	Data Science and Big Data Analytics ( <i>prerequisite: CIS 3300, CIS 3460, and at least junior standing</i> ) <b>OR</b>	
CIS 4410	Management Information Systems ( <i>prerequisite: CIS 2110 and MGT 3000</i> ) <b>OR</b>	
CIS 4500	Information Systems Security Tools and Techniques ( <i>prerequisite: CIS 3500 and junior or senior standing</i> ) <b>OR</b>	
CIS 4550	Information Systems Security Management and Information Assurance ( <i>prerequisite: CIS 3500</i> )	3 _____
	<b>Total credit hours for CIS major (minimum)</b>	<b>30</b>

\*\*\* Can be used for the CIS Concentration. See the "Two Options for completing a CIS Degree" advising sheet for the available concentrations and the associated elective courses.

**Electives**

_____	_____	_____
_____	_____	_____
	<b>Total Electives</b>	<b>14</b>
	<b>Total (minimum) credit hours for Bachelor of Science for CIS majors</b>	<b>120</b>

<sup>1</sup> A Multicultural Course must be taken as an Elective or General Studies course.

<sup>2</sup> A Global Diversity course must be taken as a General Studies course.