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Department of Computer Science and Information Systems

Interim Department Chair: **Connie W. Nyman**
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Effective July 1, 2004, the department of Computer Science and Information Systems were combined and moved to the College of Computing, Integrated Engineering, and Technology
<http://www.suu.edu/ciet>

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Computer Science and Information Systems Faculty:

Associate Professor: Tod Amon, Tom Cunningham, Connie W. Nyman,
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Professional In Residence: Chet Barney, Robert Robertson

national conferences, receiving counsel from our advisory committee, and updating our knowledge and skills.

Bachelor of Science in Computer Science Composite

Recommended for students with backgrounds in mathematics and science who seek careers in computer science or who wish to pursue graduate education. This is a SUU composite degree (a minor is not required).

Bachelor of Science in Computer Science

In addition to the Bachelor of Science in Computer Science Composite, which is the degree of choice for most computer science careers, the department offers two modified degree programs with a special emphasis in either Forensic Science or in GIS.

Bachelor of Science in Computer Science Composite, Forensic Science Emphasis

Recommended for computer science students with an interest in criminal justice who wish to work in the applied field of Computer Forensics. This is an SUU composite degree (a minor is not required).

Bachelor of Science in Computer Science Composite, Geographic Information Systems (GIS) Emphasis

Recommended for students with background in mathematics and science desiring to work in the applied field of spatial analysis and geographic information systems. This is an SUU composite degree (a minor is not required).

Bachelor of Science in Information Systems Composite

-Networking and Telecommunications Emphasis,
-User Support Emphasis,
-GIS Emphasis,
-Graphic Arts Emphasis, or
-Teaching Licensure Emphasis

Degrees Offered

Bachelor of Arts/Bachelor of Science

- Computer Science Composite
- Computer Science
- Computer Science Composite, Forensic Science Emphasis
- Computer Science, Geographic Information Systems (GIS) Emphasis
- Information Systems Composite
 - Networking and Telecommunications Emphasis
 - User Support Emphasis
 - GIS Emphasis
 - Graphic Arts Emphasis
 - Teaching Licensure Emphasis

Associate of Applied Science Degree

- Information Systems (Networking and Telecommunications)
- Information Systems (User Support Services)

Minor

- Computer Science (non-teaching Minor)
- Computer Science Education
- Computer Science Forensics
- Information Systems (non-teaching Minor)

Certificate

- Information and Office Systems Technology

Department Statement

The Department of Computer Science and Information Systems supports the mission of the University and the College of Computing, Integrated Engineering, and Technology by providing a high quality undergraduate education to students through certificate, associate, and baccalaureate degree programs.

The Department provides students with in-depth skill development in the program discipline areas of computer science and information systems, using state-of-the-art facilities and equipment.

Faculty members strive to provide superior teaching through continued professional development by maintaining memberships in appropriate professional organizations, attending regional and

SUMMARY OF COMPUTER SCIENCE FIELDS OF STUDY

All courses to be counted in the major and minor must be passed with a "C" or better. Students must take an approved comprehensive examination in computer science during their senior year, passing with a score at least in the 25th percentile.

Admission to the computer science program is contingent upon completion of Math 1210, CS 1100 and CS 1110. A student will achieve full standing in the program upon completion of CS 2400, CS 2700 and the remainder of the required mathematics courses. Students who take a programming course in high school are allowed to substitute any CS course in place of CS 1050 and are advised to take CS 1100 their first semester. Students who need to strengthen their mathematical backgrounds will need to select appropriate courses from Math 1010, 1050 and 1060 before beginning the required mathematical background courses.

SUMMARY OF INFORMATION SYSTEMS FIELDS OF STUDY

Computer Literacy Test Out Option

Students have the option to test out of the Computer Literacy Course (CS 1000, Introduction to Computers and the Internet and ISA 1050, Overview of Computer Applications) as part of their General Education requirements. This test will measure students' general knowledge of Windows and General Information, Word Processing, Spreadsheets, Database, Presentations, and the Internet. There is a fee to take the Computer Literacy Test. Students who want to take advantage of this option should contact their academic advisors for details.

Computer Science Composite Bachelor of Science	
Course Number and Title	Credits
General Education Core (see page 105)	
Core Course Requirements (must take MATH 1050)	17-18
Knowledge Areas Requirements	19
University Requirements	
BS Degree – Math or Science minimum requirement (12 hours)	
Program Prerequisite (3 hours)	
MATH 1060 Trigonometry(prerequisite for Math 1210 Calculus I)	3
Computer Science and Information Systems Core (12 hours)	
CS 1050 Introduction to Programming	3
CS 2400 Introduction to Computer Architecture	3
ISA 2000 Web Development or CS 2800 Web Programming	3
ISA 2600 Networking Technologies	3
Foundation Courses (37-41 hours)	
CS 1100 Object Oriented Programming	3
CS 1110 Data Structures	3
MATH 1040 Statistics	4
MATH 1210 Calculus I	4
MATH 1630 Discrete Mathematics	3
Student's choice of a two semester sequence: BIOL (1030, 1040) (1050, 1060) OR CHEM (1210, 1230) (1220, 1240) OR PHSC (2210, 2220, 2230) (2240, 2250, 2260)	8-12
12 Credit hours of electives in computer related classes offered by IS, MATH, CS, EET or other departments. Courses must be approved by the departmental advisor. These hours typically need to be upper division to satisfy the required 40 hours of upper division work.	12
Computer Science Core (30 hours)	
CS 3000 Algorithms	3
CS 3500 Advanced Computer Architecture	3
CS 3800 Programming Language Concepts	3
CS 4210 Software Engineering	3
CS 4400 Theory of Computation	3
15 credit hours of Computer Science electives at 3000-4000 levels	15
Free Electives	2
Total Credits, B.S. degree	120

Computer Science Composite Forensic Science Emphasis Bachelor of Science	
Course Number and Title	Credits
General Education Core (see page 105)	
Core Course Requirements (must take MATH 1050)	17-18
Knowledge Areas Requirements (must take CJ 1010)	19
University Requirements	
BS Degree – Math or Science minimum requirement (12 hours)	
Computer Science and Criminal Justice Core (15 hours)	
CS 1050 Introduction to Programming	3
CS 2400 Introduction to Computer Architecture	3
CJ 1400 Criminal Investigations	3
CJ 2150 Principles of Forensic Science	3
CJ 2350 Laws of Evidence	3
Foundation Courses (36 hours)	
CS 1100 Object Oriented Programming	3
CS 1110 Data Structures	3
MATH 1040 Statistics	4
MATH 1630 Discrete Mathematics	3
CJ 3100 Advanced Criminalistics	3
Student's choice of a two semester sequence: BIOL (1030, 1040) (1050, 1060) OR CHEM (1210, 1230) (1220, 1240) OR PHSC (2210, 2220, 2230) (2240, 2250, 2260)	8-12
12 Credit hours of electives in CS or forensic related classes in the College of Science or the Dept. of Criminal Justice. Courses must be approved by the departmental advisor. Most of these electives will need to be upper division to satisfy the required 40 hours of upper division work.	12
Computer Science - Forensic Core (28 hours)	
CS 3000 Algorithms	3
CS 3500 Advanced Computer Architecture	3
CS 3600 Operating System Concepts	3
CS 3700 Computer Forensics	3
CS 4700 Internet Forensics and Cyber Security	3
CS 3993 Independent Study in Computer Forensics	4
MACS 4890 Internship	3
6 credit hours of Computer Science electives at 3000-4000 levels. Department advisor must pre-approve student's selection of all electives.	6
Free Electives	5
Total Credits, B.S. degree	120

Computer Science Composite GIS Emphasis Bachelor of Science	
Course Number and Title	Credits
General Education Core (see page 105)	
Core Course Requirements (must take MATH 1050)	17-18

Knowledge Areas Requirements	19
University Requirements	
BS Degree – Math or Science minimum requirement (12 hours)	
Program Prerequisite (3 hours)	
MATH 1060 Trigonometry (prerequisite for Math 1210 Calculus I)	3
Computer Science and Information Systems Core (12 hours)	
CS 1050 Introduction to Programming	3
CS 2400 Introduction to Computer Architecture	3
ISA 2000 Web Development or CS 2800 Web Programming	3
ISA 2600 Networking Technologies	3
Foundation Courses (36-40 hours)	
CS 1100 Object Oriented Programming	3
CS 1110 Data Structures	3
MATH 1040 Statistics	4
MATH 1210 Calculus I	4
MATH 1630 Discrete Mathematics	3
Student's choice of a two semester sequence: BIOL (1030, 1040) (1050, 1060), or CHEM (1210, 1220) (1230, 1240) or PHSC (2210, 2220, 2230) (2240, 2250, 2260)	8-12
GEOG 2900 GPS Theory, Techniques and Methods	2
GEOG 3500 Intro to Cartography	3
GEOG 3510 Intro to Cartography Lab	1
GEOG 3550 Principles of GIS	3
GEOG 3560 Principles of GIS Lab	2
Major Requirements – GIS (30 hours)	
CS 3000 Algorithms	3
CS 2800 Web Programming	3
CS 3500 Advanced Computer Architecture	3
CS 3993 Undergraduate Research	3
GEOG 4150 Advance GIS Analysis Methods Lab	3
GEOG 4500 GIS Research Project (Capstone)	3
6 credit hours of Mathematics or Computer Science electives at 3000 – 4000 (advisement required)	6
6 credit hours of electives related to applications of GIS at 3000 - 4000 level (advisement required)	6
Free Electives	6
Total Credits, B.S. degree	120

Information Systems Composite All Emphases Bachelor of Arts/Bachelor of Science	
Course Number and Title	Credits
General Education Core (see page 105)	
Core Course Requirements (must take MATH 1040, ISA 1050, or CS 1000*)	17-18
Knowledge Areas Requirement (must take the following courses to fulfill both GE and Information Systems department requirements) - BA 1010 - ECON 2010	19

University Requirements	
BA Degree – Foreign Language/ASL Requirement (16 hours or proficiency test)	
BS Degree – Math or Science minimum requirement (12 hours)	
IS/CS (15 Hours) Foundation Core	
CS 1050 Introduction to Programming	3
CS 2400 Introduction to Computer Architecture	3
EET 2750 PC Maintenance & Repair	3
ISA 2000 Web Development	3
ISA 2600 Telecommunications/Networking Tech.	3
IS Major Core (33 Hours)	
ACCT 2010 Accounting Principles	3
MGMT 3180 Management & Organizations	3
MKTG 3010 Marketing Principles	3
FIN 3250 Managerial Finance	3
CS 1100 Object Oriented Programming	3
CS 2800 Web Programming	3
IS 3000 Fundamentals of Information Systems	3
IS 3600 Systems Implementation w/ DBMS	3
IS 4200 Systems Analysis & Design	3
IS 4700 e-Business & Web Development	3
IS 4800 Capstone: IS Project Management	3
Select one of the following emphases:	
Networking & Telecommunications Emphasis (18 Hours)	
ISA 2050 Web Server Management	3
ISA 2620 Network Administration I	3
ISA 2640 Network Administration II	3
ISA 2680 Network Design	3
ISA 2660 Service & Support	3
ISA 2500 Advanced Spreadsheets	3
User Support Emphasis (18 Hours)	
ISA 2450 Multimedia Applications	3
ISA 2500 Advanced Spreadsheets	3
ISA 2620 Network Administration I	3
IS 4600 Emerging IS Technologies	3
Elective Requirement: 6 Hours (See IS Advisor for Approval)	6
GIS Emphasis (26 Hours) See GIS Advisor for Approval	
GEOG 2900 GPS Theory, Techniques and Methods	2
GEOG 3500 Intro to Cartography	3
GEOG 3510 Intro to Cartography Lab	1
GEOG 3550 Principles of GIS	3
GEOG 3560 Principles of GIS Lab	2
GEOG 4150 Advance GIS Analysis Methods Lab	3
GEOG 4500 GIS Research Project (Capstone)	3
GEOG 4893 GIS Internship	3
Or	
GEOG 3993 Undergraduate Research in Geog/GIS	3
Elective Requirements (See GIS Advisor for Approval)	6
Graphic Arts Emphasis (18 Hours)	

See Art Department Chair for Approval	18
Teaching Licensure Emphasis for IS and BE (18 Hours + Professional Education Requirements for Secondary Licensure)	
ACCT 2360 Business Law	3
ISA 2300 Written Business Communication	3
ISA 2620 Network Administration I	3
ISA 1800 Word Processing	3
ISA 2100 Database	3
ISA 2500 Advanced Spreadsheets	3
Free Electives (May fulfill requirement for B.A. degree)	0-18
Total Credits, B.S. degree	120
Total Credits, B.S. degree – Teaching Licensure Emphasis	135

Professional Education Requirements for Secondary Licensure	
Course Title	Credits
Required Credits: 30-31 minimum in Education	
EDUC 2000 Exploring Education in Society	3
EDUC 3170 Instructional Technology for Educators	3
SCED 3200 Secondary Educational Psychology	3
SPED 3030 Foundations of Special Education	2
4900 (methods of teaching course in the area(s) seeking licensure)	2-3
Secondary Block as noted below	
SCED 3570 Motivation and the Management of Diverse Instructional Environments for Secondary Teachers	3
SCED 3590 Instructional Planning, Delivery, and Assessment for Secondary Teachers	3
SCED 3720 Content Literacy	2
SCED 4520 Secondary Practicum/Seminar Clinical Practice (student teaching) is taken the semester prior to secondary block as noted below	3
SCED 4980 Clinical Practice	7
4980 Clinical Practice (student teaching in the content area(s) of licensure is taken the semester following the secondary block	2
Total Credits	33-34
<i>All students must participate in PBL or DEX</i>	

Information Systems Applications All Emphases Associate of Applied Science	
Course Number and Title	Credits
General Education Core (see page 105)	
Complete a minimum of 20-21 credit hours in general education as follows: A minimum of one course in each of the core categories. Three courses representing three of six remaining general education categories. Students should check the department AAS requirements to determine if specific general education classes are recommended (English 1010 will satisfy the requirement for an AAS degree).	20-21
ISA Common Core (20 hours)	
ISA 1300 Business English	

Or	3
ISA 2300 Written Business Communication	
ISA 1950 Professional Leadership Development	1+1
ISA 2000 Web Development	3
ISA 2200 Resume/Interview Preparation	2
ISA 2600 Telecommunications and Networking	3
ISA 2900 Computer Tutorial Internship	1
CS 1050 Introduction to Programming	3
IS 3000 Fundamentals of Information Systems	3
Select one of the two following emphases:	
Networking and Telecommunications Emphasis (21 hours)	
ISA 2050 Web Server Management	3
ISA 2500 Advanced Spreadsheets	3
ISA 2620 Network Administration I	3
ISA 2640 Network Administration II	3
ISA 2660 Network Service and Support	3
ISA 2680 Network Design	3
EET 2750 Computer Hardware (A+ Certification)	3
***The students must pass at least one certification examination such as A+, CNA, MCP, etc. Note: Please see academic advisor for suggested electives and general education courses. Also, note that a grade below "C-" will not be accepted in the required core courses.	
User Support Services Emphasis (21 hours)***	
ISA 1800 Word Processing	3
ISA 2100 Database	3
ISA 2400 Desktop Publishing	3
ISA 2450 Multi-Media Presentations	3
ISA 2500 Advanced Spreadsheets	3
ISA 2620 Network Administration I	3
ISA 2800 Advanced Computer Applications	3
***The students must pass at least one certification examination such as Microsoft Office Specialist, Excel, Word, Access, or PowerPoint. Note: Please see academic advisor for suggested electives and general education courses. Also, note that a grade below "C" will not be accepted in the required core courses.	
Free Electives	3
Total Credits (either emphasis)	64
Students who elect to complete an information systems applications associate degree must have an overall GPA of 2.5 or better. Any course with a grade below a C- must be retaken and a better grade achieved. The AAS degree in information systems applications is based on a 2 + 2 program after which a bachelors degree in information systems may be completed.	

Computer Science (non-teaching) Minor	
Course Number and Title	Credits
Required Courses (22 hours)	
CS 1050 Introduction to Programming	3
CS 1100 Object Oriented Programming	3
CS 1110 Data Structures	3

CS 2400 Fundamentals of Computer Architecture	3
CS 3000 Algorithms	3
Electives (any CS courses, except CS 1000)	6
MACS 4990 Seminar	1
Total Credits	22

Computer Science Minor Emphasis in Education	
Course Number and Title	Credits
Required Courses (21 Hours)	
CS 1050 Introduction to Programming	3
CS 1100 Object Oriented Programming	3
CS 1110 Data Structures	3
CS 2400 Fundamentals of Computer Architecture	3
ISA 2000 Web Development or CS 2800 Web Programming	3
EDUC 3170 Media Production and Utilization	3
Electives (any CS course, except CS 1000)	3
Total Credits	21

Computer Science Minor Emphasis in Forensics	
Course Number and Title	Credits
Required Courses (21 Hours)	
CS 1050 Introduction to Programming	3
CS 1100 Object Oriented Programming	3
CS 1110 Data Structures	3
CJ 1010 Introduction to Criminal Justice	3
CJ 2350 Laws of Evidence	3
CS 3700 Computer Forensics	3
CS 4700 Internet Forensics and Cyber Security	3
Total Credits	21

Information Systems (Non-Teaching) Minor	
Course Number and Title	Credits
Required	
IS 3000 Information Systems for Management	3
ISA 2600 Telecommunications/ Networking Tech	3
(12 Upper-division Elective Credits in IS - See IS Advisor for Elective Options)	12
Total Credits	18

Information and Office Systems Technology Certificate	
Course Number and Title	Credits
Core Requirements (13 credit hours)	
ISA 1050 Overview of Computer Applications	3

ISA 1300 Business in English	3
ISA 1800 Word Processing	3
ISA 1950 Professional Leadership Development	1
ISA 2000 Web Development	3
Electives (17 credit hours from the following courses)	
ISA 2050 Web Server Management	3
ISA 2100 Database	3
ISA 2200 Resume/Interview Preparation	2
ISA 2300 Written Business Communication	3
ISA 2400 Desktop Publishing	3
ISA 2450 Multi-Media Presentations	3
ISA 2500 Advanced Spreadsheets	3
ISA 2600 Telecommunications and Networking	3
ISA 2620 Network Administration I	3
ISA 2640 Network Administration II	3
ISA 2660 Network Service and Support	3
ISA 2680 Network Design	3
ISA 2800 Advanced Computer Applications	3
The student is encouraged to pass at least one certification exam.	
Total Credits	30