Computing Sciences

Fall 2005

Degrees and Certificates:

October 1st, 2005

A.S. Computer Science

A.S. Information Systems

A.A.S. Information Technology

Applied Computer Applications Certificate

Information Security Certificate

Department of Computing Sciences

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CHOOSING A COMPUTER MAJOR

There are five programs of study in Computing Sciences at Finger Lakes Community College. Currently offered are: an A.S. in Computer Science, an A.S. in Information Systems, an A.A.S. in Information Technology, an Applied Computer Applications Certificate, and a Certificate in Information Security.

The A.S in Computer Science and the A.S. in Information Systems have been set up to transfer well into four-year institution degree programs. Additionally, all degrees and the certificates prepare the student for employment in the work force directly upon completion. Upon graduation with any of the programs, a student has many choices. Typically, a graduate chooses either to transfer to a four-year institution or to seek employment in the computer science / information technology field.

The **A.S. in Computer Science** requires a significant amount of Mathematics and Science. These courses are necessary to fulfill the Liberal Arts component of the degree so that ultimately transfer into a bachelor's degree program will be easier. The graduates will become programmers in both small and large businesses, systems analysts, technical support personnel, management systems personnel, and systems programmers. Most of these students transfer to a four year institutions to continue their education, although a few seek employment in entry level computing positions and continue their education later. Since this degree requires Calculus I and II, a student should be prepared to complete these requirements in two years or it will be necessary to extend their program beyond the two years. The computer courses that are required use the language Java.

The **A.S. in Information Systems** also transfers to four-year institutions in the business division (usually the MIS area). The program has numerous business course requirements, Statistics I and II instead of Calculus I and II, and other liberal arts courses to fulfill the general education requirements. Students gain employment in many of the same areas as the Computer Science graduates - programming, systems analysis and design, technical support - as well as operations and applications. The computer courses required include programming in Java, programming in a business language such as Visual BASIC, and high-level development work in state-of-the-art applications.

The **A.A.S. in Information Technology** is designed so that the student can enter the job market upon graduation as, for example, a PC technician, a network technician or administrator, or a computer support person. There are four Advisement Areas of which the student must choose two. The four areas are Applications and Database Management, Networking Technology, Web Programming, and Electronic Commerce. The need for computer/ information technology graduates has grown dramatically in the last few years and according to the government job projections for the next five years; Information Technology will have one of the top placement opportunities. Depending on advisement areas chosen, course topics may include everything from assembling microcomputers and networks to exploring new areas in database management as well as web programming and e-commerce.

The **Certificate in Applied Computer Applications** is designed to be a stand-alone certificate for students who want to concentrate mainly on user/developer application coursework. The emphasis is placed on using existing software, as opposed to new program development. This program is designed for the student who wants to complement a current degree such as Accounting or Business Administration as well as the person already in the work force who wants to enhance their computing skills or gain new skills. This Certificate also has some business course requirements, which complement the application skills.

The **Certificate in Information Security** is designed to provide students with the opportunity to gain marketable skills after one year of study, as it includes the curriculum necessary to obtain generic (non-vendor specific) certification in information security. This certificate program is a viable option for students who are interested in supplementing the FLCC AAS degree in Information Technology. It is also an option for computer professionals who wish to acquire the knowledge to enter the field of information/networking security. This certificate is not for entry level information technology or computing students. Minimum requirements for entry candidates are an AAS degree in computer science/information technology/information systems or related field.

INFORMATION TECHNOLOGY

ASSOCIATE IN APPLIED SCIENCE

Curriculum Requirements:

The student is required to complete a minimum of 66 semester hours with a quality point average of not less than C (2.0). The students must successfully complete the following blocks of courses.

Humanities (9 hours)

ENG 101 Freshman English I (or ENG 104 English Honors I)

ENG 102 Intro. to Literature (or ENG 105 English Honors II)

COM 110 Public Speaking or COM 115 Interpersonal Communications

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Social Science

(6 hours)

ECO 210 Principles of Macroeconomics

ECO 211 Principles of Microeconomics

Mathematics (6 hours)

MAT 121 or higher

Computer Science (38 hours)

CSC103 Computing Freshman Seminar

CSC 115 Introduction to Programming and Computing

CSC 190 Data Structures I

CSC 271 A+ Hardware and Operating Systems Technologies

CSC250 Computing Sciences Internship

Choose 2 Advisement areas and any additional CSC courses to total 24 additional hours:

Advisement Area 1: Applications and Database Management

CSC 134 Core Word

CSC135 Core Excel

CSC136 PowerPoint

CSC 211 MS Access and Applied Database Processing

CSC 215 Visual BASIC

CSC 245 Visual BASIC for Business Applications

Advisement Area 2: Networking Technology

CSC 272 Managing Operating Systems

CSC 260 Data Communications and Networking

CSC 261 Internetworking

CSC 248 Networking Services and Support

Advisement Area 3: Web Programming

CSC 215 Visual BASIC

CSC 262 Web Site Development and Programming

CSC 235 Active Server Pages and Server-Side Scripting

CSC 252 Multimedia for Information Technology

Advisement Area 4: Electronic Commerce

BUS 120 Business Organization

BUS 222 Marketing

BUS 235 International Business

CSC 247 Electronic Commerce

(Note: if Advisement Area 4 is chosen, Advisement Area 3 must be the second area chosen)

Advisor Electives (3 hours)

ART

Or

CSC

Or

PLG110 Computer Law & Policy

(Advisement Area 4 must take ACC 101 Accounting I)

Health, Physical

Education Electives

(4 hours)

INFORMATION SYSTEMS

ASSOCIATE IN SCIENCE

Curriculum Requirements:

The student is required to complete a minimum of 66 semester hours with a quality point average of not less than C (2.0). The students must successfully complete the following blocks of courses.

If a student transfers to a SUNY institution, consult the General Education Requirements lists: 3 hours of Social Science should be in US History, 3 hours of Social Science should be in Western Civilizations, 3 hours of Social Science should be in other world civilizations, 3 hours of electives should be from the Arts, and 3 hours of Foreign Language should be taken.

Humanities (9 hours)

ENG 101 Freshman English I

ENG 102 Intro. to Literature

COM 110 Public Speaking or COM 115 Interpersonal Communications

OR

ENG 104 English Honors I

ENG 105 English Honors II

COM 110 Public Speaking or COM 115 Interpersonal Communications

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Social Science Electives

(9 hours)

ECO 210 Principles of Macroeconomics

ECO 211 Principles of Microeconomics

HIS

Science (8 hours)

Sequence in a lab science

Mathematics (6 hours)

MAT 121 Statistics I AND MAT 122 Statistics II (dependent on transfer institution)

OR

MAT 271 Calculus I AND MAT 272 Calculus II (dependent on transfer institution)

Business (10 hours)

ACC101 Principles of Financial Accounting

BUS123 Business Communication

BUS222 Marketing

Computer Science (17 hours)

CSC103 Computing Sciences Freshman Seminar

CSC 115 Introduction to Programming and Computing

CSC 211 MS Access and Database Processing

CSC 134 Core Word

CSC 135 Core Excel

CSC 190 Data Structures I

CSC 200 Data Structures II

Health, Physical

Education Electives

(4 hours)

Advisor Electives The remainder of the required hours must be a CSC course at 200 level or one of the courses from the General Education requirements not already completed. Electives should be chosen depending on future interests and in consultation with an advisor.

COMPUTER SCIENCE

ASSOCIATE IN SCIENCE

Curriculum Requirements:

The student is required to complete a minimum of 66 semester hours with a quality point average of not less than C (2.0). The students must successfully complete the following blocks of courses.

If a student transfers to a SUNY institution, consult the General Education Requirements lists: 3 hours of Social Science should be in US History, 3 hours of Social Science should be in Western Civilizations, 3 hours of Social Science should be in other world civilizations. 3 hours of electives should be from the Arts, and 3 hours of Foreign Language should be taken.

Humanities (9 hours)

ENG 101 Freshman English I

ENG 102 Intro. to Literature

COM 110 Public Speaking or COM 115 Interpersonal Communications

OR

ENG 104 English Honors I

ENG 105 English Honors II

COM 110 Public Speaking or COM 115 Interpersonal Communications

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Social Science Electives

(9 hours)

3 hours Social Science from General Education List

3 hours HIS

3 hours Social Science

Science (8 hours)

PHY 151 PHY 152 Gen. Physics I & II

OR

CHM 121 CHM 122 Gen. Chemistry I & II

OR

BIO 121 BIO 122 Gen. Biology I & II

Mathematics (11 hours)

MAT 271 Calculus I

MAT 272 Calculus II

MAT 220 Discrete Mathematics

Computer Science (18 hours)

CSC103 Computing Sciences Freshman Seminar

CSC 115 Introduction to Programming and Computing

CSC 190 Data Structures I

CSC 200 Data Structures II

2 Computer Science Electives above the 200 level

Health, Physical

Education Electives

(4 hours)

Electives The remainder of the required hours must be approved electives. Electives should be chosen depending on future interests and in consultation with an advisor.

APPLIED COMPUTER APPLICATIONS

CERTIFICATE

Curriculum Requirements:

The students must complete a minimum of 31 hours with a quality point average not less than C (2.0).

The following courses must be completed:

Liberal Arts (3 hours)

Math Elective

Business (8 hours)

BUS 123 Business Communications

OFT 100 Computer Keyboarding

ACC 103 or ACC 101 Principles of Financial Accounting

Computing Sciences (17 hours)

CSC 103 Computing Sciences Freshman Seminar

CSC 115 Introduction to Programming and Computing

CSC102 Tools for the Internet User

CSC 134 Core Word

CSC 135 Core Excel

CSC 136 PowerPoint

CSC 211 MS Access and Applied Database Processing

CSC elective or PLG 110 Computer Law and Policy

General (3 hours) Elective

The certificate program in Applied Computer Applications is designed to provide students with the opportunity to gain salable skills after one year of study. This certificate program is a viable option for students who are interested in supplementing another associates degree in other fields such as Business Administration and Accounting.

Information Security Certificate

Curriculum Requirements:

Students must complete a minimum of 32 hours with a quality point average not less than C (2.0). The following must be completed:

Paralegal	PLG110	Computer Law & Policy
(3 hours)		
Computing Sciences	CSC247	E – Commerce
(29 hours)	CSC248	Networking Services & Support
	CSC260	Data Communications & Networking
	CSC261	Internetworking
	CSC270	Principles of Information Security
	CSC271	A+ Core Hardware & OS Technologies
	CSC272	Managing Operating Systems
	CSC273	Technical Info Security
	CSC274	Computer Forensics & Investigations
	CSC275	Preparing for Security+ Certification

This certificate program in Information Security is designed to provide students with the opportunity to gain saleable skills after one year of study.

Computing Sciences Courses

- **CSC 100 Computing in the Information Age (3)**
- **CSC 102 Tools for Internet Users (3)**
- **CSC 103 Computing Sciences Freshman Seminar (2)**
- **CSC 115 Introduction to Programming and Computing (3 credit 4 contact) pre: GST 142 or equivalent**
- **CSC 134 Core Word (1) pre: CSC100 Computing in the Information Age or familiarity with Windows**.
- **CSC 135 Core Excel (1) pre: CSC100 Computing in the Information Age or familiarity with Windows**
- **CSC 136 PowerPoint (1) pre: CSC100 Computing in the Information Age or familiarity with Windows**
- **CSC 137 Expert Word (2) pre: Students must be skilled with Word at the Core level prior to taking this course**.
- **CSC 138 Expert Excel (2) pre: Students must be skilled with Excel at the Core level prior to taking this course**
- **CSC 172 Computer Programming for Engineering (3)**
- **CSC 190 Data Structures I (3 credit hours, 4 contact hours) pre: CSC 115 with a C or better.**
- **CSC 200 Data Structures II (4 credit hours, 5 contact hours) pre: CSC 190**
- **CSC 211 MS Access and Database Processing (3) pre: Successful completion with a C or better in CSC 115 Introduction to Programming and Computing and (CSC134 or CSC137 and CSC135 or CSC138 and CSC135)**
- **CSC 215 Visual Basic (3) pre: CSC 115 with a C or better or programming experience**
- **CSC 235 Active Server Pages for Server-Side Scripting (3) pre: CSC 262**
- **CSC 245 Visual BASIC for Business Applications (3) pre: CSC 215**
- **CSC 247/BUS 247 Electronic Commerce (3) pre: CSC 262, BUS 222**
- **CSC 248 Networking Services and Support (3) pre: CSC 260 co: CSC 261, CSC271**
- **CSC 250 Computing Sciences Internship (3)**
- **CSC 252 Multimedia for Information Technology (3) pre: CSC 262**
- **CSC 260 Data Communications and Networking (3) pre: CSC 115 with a C or better.**
- **CSC 261 Internetworking (3) pre: CSC 260**
- **CSC 262 Web Site Development and Programming (3) pre: CSC 115 co: CSC 190**
- **CSC270 Principles of Information Security (3) pre: CSC260 or permission of instructor**

- **CSC271 A+ Hardware and OS Technology (3)**
- **CSC272 Managing Operating Systems (3) pre: CSC190, co: CSC260**
- **CSC273 Technical Information Security (3) pre: CSC260, CSC270**
- **CSC274 Computer Forensics & Investigations (3) pre: CSC260, CSC271 and CSC272**
- **CSC275 Preparing for Security+ Certification (2)**
  (students must be in the last semester of the certification program.)
- **CSC 290 Preparing for the A+ Certification (2) CSC 271 or job experience**
- **CSC 291 Preparing for the Network+ Certification (2) CSC 260, CSC 261 or job experience**