

**Business Division**

**TRANSFER DEGREES PROGRAM GUIDELINES**

*AS Degree 11AB – Area of Concentration: Computer Information Technology*

**AREA OF CONCENTRATION:  
COMPUTER INFORMATION TECHNOLOGY**

**I. College Requirements<sup>^</sup>**

**II. General Education Requirements .....43**

**A. Communication Arts .....9**

CMM 121 Fundamentals of Speech .....3

⊗ ENG 121 English Composition I .....3

⊗ ENG 122 English Composition II **or**

⊗ ENG 126 Advanced Composition: Scientific  
and Technical Composition.....3

**B. Social Sciences.....9**

Recommended Courses:

ECO 221 Principles of Macroeconomics .....3

ECO 222 Principles of Microeconomics .....3

Social Science Elective\* .....3

**C. Physical and Life Sciences .....8**

Physical Science with Lab Elective\* .....4

Life Science with Lab Elective\* .....4

**D. Mathematics .....8**

Recommended Courses:

MTH 145 Calculus and Analytic Geometry I **or** .....4

MTH 224 Calculus for Business and  
Social Science .....5

MTH 222 Elementary Statistics.....4

**E. Humanities and Fine Arts .....9**

Fine Arts Elective\* .....3

Humanities Elective\* .....3

Humanities or Fine Arts Elective\* .....3

For more information on recommended courses or program specific advising, contact the following faculty or the Business Division at (847) 543-2041:

Changyi Chen	Dan Dainton	Ellen Dykeman
Sanjay Kumar	John North	Bob Scherbaum

**III. International/Multicultural Requirement (I/M)**

Select one course from the I/M list on page 49. This course can fulfill both the I/M requirement and a Social Science, Humanities, Fine Arts or Elective requirement. A BA degree at many four-year colleges may require college-level foreign language.

**IV. Area of Concentration/Elective Requirements .....17**

Recommended Courses:

ACC 121 Financial Accounting .....4

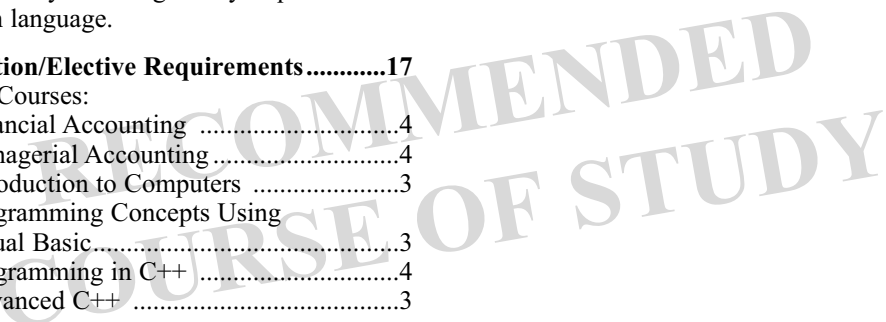
ACC 122 Managerial Accounting .....4

CIT 120 Introduction to Computers .....3

CIT 134 Programming Concepts Using  
Visual Basic.....3

CIT 141 Programming in C++ .....4

CIT 241 Advanced C++ .....3



Courses listed are **recommended** for students who have not decided upon a specific four-year college or university in which to transfer. Students are **strongly encouraged** to meet with a counselor or advisor to identify coursework that will meet both CLC and transfer requirements. <sup>^</sup> See page 49 for College Requirements / ⊗ A grade of C or better is required for all English course requirements. / \* See pages 52-61 for Course Selections

**COMPUTER INFORMATION TECHNOLOGY**

**Business Division, Room T102, (847) 543-2041**

The Computer Information Technology degree programs provide eight specialty options with a common core of general education, business and introductory computer courses. These specialty options include five Associate in Applied Science degrees in application programming, and Associate in Applied Science degrees in the areas of Network Administration and Security, Computer Forensics and Microsoft™ Office Application Specialist. Certificate options in multiple areas are also offered.

The computer technology emphasis of this degree program is a Windows-based programming and software applications environment.

To complete an AAS, students must meet the General Requirements on page 93. In addition, students should select General Education electives (\*) from those listed on page 94. All course prerequisites must be met.

**OFFICE APPLICATION SPECIALIST  
(Associate in Applied Science) Plan 22CB**

**Required General Education Coursework .....15**

AOS 122	Business Mathematics <i>or</i>	
MTH 122	College Algebra <i>or</i>	
MTH	Elective (higher than MTH 122).....	3-4
CMM 111	Communication Skills <i>or</i>	
CMM 121	Fundamentals of Speech <i>or</i>	
CMM 128	Interviewing Practices .....	3
ENG 121	English Composition I .....	3
	Humanities or Fine Arts Elective*# .....	3
	Social Sciences Elective* .....	3

**Required Business Coursework .....6-7**

ACC 112	Accounting Procedures I <i>or</i>	
ACC 121	Financial Accounting .....	3-4
BUS 121	Introduction to Business.....	3

**Required Office Application/CIT Coursework.....39-40**

AOS 113	Comprehensive Word Processing.....	3
AOS 215	Presentation Software.....	3
CIT 111	Comprehensive Spreadsheets .....	3
CIT 112	Comprehensive Database .....	3
CIT 120	Introduction to Computers .....	3
CIT 131	Windows Operating System.....	3
CIT 150	Introduction to Local Area Networking .....	3
CIT 170	Creating Web Pages .....	3
CIT 210	Programming for Office Applications .....	3
CIT 271	Markup Language Programming .....	3
	Office Application Specialist Electives ..	9-10

**Total Hours for AAS Degree.....60-63**

# HUM 127, PHI 122, or PHI 125 recommended.

**Office Application Specialist Electives**

Select 9-10 hours from the list below:

ACC 122	Managerial Accounting .....	4
CIT 113	Introduction to SQL .....	3
CIT 130	Operating Systems for A+ Certification.....	3
CIT 132	Linux Operating System.....	3
CIT 134	Programming Concepts Using Visual Basic <i>or</i>	
CIT 136	Programming Concepts Using Java .....	3
CIT 171	Web Page Scripting .....	3
CIT 172	E-Commerce Implementation and Impact ....	3
CIT 211	Project Management Software .....	3
ELT 151	PC Hardware Fundamentals.....	3
ELT 152	PC Peripherals and Troubleshooting .....	3

## Associate in Applied Science and Career Certificates

### NETWORK ADMINISTRATION AND SECURITY

(Associate in Applied Science) Plan 22CD

#### Required General Education Coursework .....15

AOS	122	Business Mathematics <i>or</i>	
MTH	122	College Algebra <i>or</i>	
MTH		Elective (higher than MTH 122).....	3-4
CMM	111	Communication Skills <i>or</i>	
CMM	121	Fundamentals of Speech <i>or</i>	
CMM	128	Interviewing Practices .....	3
ENG	121	English Composition I .....	3
PSY	121	Introduction to Psychology <i>or</i>	
PSY	122	Psychology in Business and Industry.....	3
		Humanities or Fine Arts Elective*# .....	3

#### Required Business Coursework .....3

BUS	121	Introduction to Business.....	3
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#### Required CIT Coursework .....45

CIT	120	Introduction to Computers .....	3
CIT	131	Windows Operating System .....	3
CIT	132	Linux Operating System.....	3
CIT	134	Programming Concepts using Visual Basic <i>or</i>	
CIT	136	Programming Concepts using Java .....	3
CIT	150	Introduction to Local Area Networking .....	3
CIT	151	LAN Administration <i>or</i>	
CIT	230	Linux System Administration.....	3
CIT	152	Network Security Fundamentals .....	3
CIT	155	Introduction to Computer Forensics.....	3
CIT	156	Digital Evidence Recovery.....	3
CIT	250	Advanced LAN Administration .....	3
CIT	251	Implementing and Administering Security in Windows .....	3
CIT	252	Hardening the Infrastructure .....	3
CIT	253	Network Defense and Countermeasures .....	3
CIT	256	Advanced Digital Evidence Recovery .....	3
ELT	151	PC Hardware Fundamentals.....	3

#### Total Hours for AAS Degree.....63-64

# HUM 127, PHI 122, or PHI 125 recommended.

### WEB PROGRAMMER

(Associate in Applied Science) Plan 22CJ

#### Required General Education Coursework .....15

AOS	122	Business Mathematics <i>or</i>	
MTH	122	College Algebra <i>or</i>	
MTH		Elective (higher than MTH 122).....	3-4
CMM	111	Communication Skills <i>or</i>	
CMM	121	Fundamentals of Speech <i>or</i>	
CMM	128	Interviewing Practices .....	3
ENG	121	English Composition I .....	3
PSY	121	Introduction to Psychology <i>or</i>	
PSY	122	Psychology in Business and Industry.....	3
		Humanities or Fine Arts Elective*# .....	3

#### Required Business Coursework .....9-11

ACC	112	Accounting Procedures I <i>or</i>	
ACC	121	Financial Accounting .....	3-4
ACC	113	Accounting Procedures II <i>or</i>	
ACC	122	Managerial Accounting <i>or</i>	
BUS	111	Fundamentals of Finance .....	3-4
BUS	121	Introduction to Business.....	3

#### Required CIT Coursework .....36

CIT	112	Comprehensive Database .....	3
CIT	113	Introduction to SQL .....	3
CIT	120	Introduction to Computers .....	3
CIT	134	Programming Concepts using Visual Basic <i>or</i>	
CIT	136	Programming Concepts using Java .....	3
CIT	150	Introduction to Local Area Networking .....	3
CIT	170	Creating Web Pages .....	3
CIT	171	Web Page Scripting .....	3
CIT	173	PHP Programming .....	3
CIT	239	Systems Analysis .....	3
CIT	270	Server Side Programming .....	3
CIT	271	Markup Language Programming .....	3
CIT		Programming Electives (at end of section) <i>or</i> Non-programming Electives .....	3

#### Total Hours for AAS Degree.....60-62

# HUM 127, PHI 122, or PHI 125 recommended.

### C++ PROGRAMMER

(Associate in Applied Science) Plan 22CR

#### Required General Education Coursework .....15

AOS	122	Business Mathematics <i>or</i>	
MTH	122	College Algebra <i>or</i>	
MTH		Elective (higher than MTH 122).....	3-4
CMM	111	Communication Skills <i>or</i>	
CMM	121	Fundamentals of Speech <i>or</i>	
CMM	128	Interviewing Practices .....	3
ENG	121	English Composition I .....	3
PSY	121	Introduction to Psychology <i>or</i>	
PSY	122	Psychology in Business and Industry.....	3
		Humanities or Fine Arts Elective*# .....	3

#### Required Business Coursework .....9-11

ACC	112	Accounting Procedures I <i>or</i>	
ACC	121	Financial Accounting .....	3-4
ACC	113	Accounting Procedures II <i>or</i>	
ACC	122	Managerial Accounting <i>or</i>	
BUS	111	Fundamentals of Finance .....	3-4
BUS	121	Introduction to Business.....	3

#### Required CIT Coursework .....37

CIT	112	Comprehensive Database .....	3
CIT	113	Introduction to SQL .....	3
CIT	120	Introduction to Computers .....	3
CIT	134	Programming Concepts using Visual Basic <i>or</i>	
CIT	136	Programming Concepts using Java .....	3

## Associate in Applied Science and Career Certificates

CIT	141	Programming in C++ .....	4
CIT	150	Introduction to Local Area Networking .....	3
CIT	170	Creating Web Pages .....	3
CIT	233	Programming in Visual C++ .....	3
CIT	239	Systems Analysis .....	3
CIT	241	Advanced C++ .....	3
CIT		Programming Electives (at end of section) <i>or</i>	
		Non-programming Electives .....	6

**Total Hours for AAS Degree.....61-64**

# HUM 127, PHI 122, or PHI 125 recommended.

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### VISUAL BASIC PROGRAMMER (Associate in Applied Science) Plan 22CL

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**Required General Education Coursework .....15**

AOS	122	Business Mathematics <i>or</i>	
MTH	122	College Algebra <i>or</i>	
MTH		Elective (higher than MTH 122).....	3-4
CMM	111	Communication Skills <i>or</i>	
CMM	121	Fundamentals of Speech <i>or</i>	
CMM	128	Interviewing Practices .....	3
ENG	121	English Composition I .....	3
PSY	121	Introduction to Psychology <i>or</i>	
PSY	122	Psychology in Business and Industry.....	3
		Humanities or Fine Arts Elective*# .....	3

**Required Business Coursework .....9-11**

ACC	112	Accounting Procedures I <i>or</i>	
ACC	121	Financial Accounting .....	3-4
ACC	113	Accounting Procedures II <i>or</i>	
ACC	122	Managerial Accounting <i>or</i>	
BUS	111	Fundamentals of Finance .....	3-4
BUS	121	Introduction to Business.....	3

**Required CIT Coursework .....36**

CIT	112	Comprehensive Database .....	3
CIT	113	Introduction to SQL .....	3
CIT	120	Introduction to Computers .....	3
CIT	134	Programming Concepts using Visual Basic <i>or</i>	
CIT	136	Programming Concepts using Java .....	3
CIT	135	Intro to Visual Basic Programming .....	3
CIT	150	Introduction to Local Area Networking .....	3
CIT	170	Creating Web Pages .....	3
CIT	234	Objects and Components using Visual Basic.....	3
CIT	235	Enterprise Database Access using Visual Basic .....	3
CIT	239	Systems Analysis .....	3
CIT		Programming Electives <i>or</i> Non-programming Electives (at end of section) .....	6

**Total Hours for AAS Degree.....60-63**

# HUM 127, PHI 122, or PHI 125 recommended.

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### JAVA PROGRAMMER (Associate in Applied Science) Plan 22CM

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**Required General Education Coursework .....15**

AOS	122	Business Mathematics <i>or</i>	
MTH	122	College Algebra <i>or</i>	
MTH		Elective (higher than MTH 122).....	3-4
CMM	111	Communication Skills <i>or</i>	
CMM	121	Fundamentals of Speech <i>or</i>	
CMM	128	Interviewing Practices .....	3
ENG	121	English Composition I .....	3
PSY	121	Introduction to Psychology <i>or</i>	
PSY	122	Psychology in Business and Industry.....	3
#		Humanities or Fine Arts Elective* .....	3

**Required Business Coursework .....9-11**

ACC	112	Accounting Procedures I <i>or</i>	
ACC	121	Financial Accounting .....	3-4
ACC	113	Accounting Procedures II <i>or</i>	
ACC	122	Managerial Accounting <i>or</i>	
BUS	111	Fundamentals of Finance .....	3-4
BUS	121	Introduction to Business.....	3

**Required CIT Coursework .....36**

CIT	112	Comprehensive Database .....	3
CIT	113	Introduction to SQL .....	3
CIT	120	Introduction to Computers .....	3
CIT	134	Programming Concepts using Visual Basic <i>or</i>	
CIT	136	Programming Concepts using Java .....	3
CIT	137	Object Oriented Programming using Java ....	3
CIT	150	Introduction to Local Area Networking .....	3
CIT	170	Creating Web Pages .....	3
CIT	236	Programming Using JavaBeans .....	3
CIT	237	Enterprise Java Development.....	3
CIT	239	Systems Analysis .....	3
CIT		Programming Electives <i>or</i> Non-programming Electives (at end of section) .....	6

**Total Hours for AAS Degree.....60-63**

# HUM 127, PHI 122, or PHI 125 recommended.

### Electives for Plans 22CJ, 22CL, 22CM and 22CR Programming

CIT	135	Introduction to Visual Basic Programming ..	3
CIT	137	Object Oriented Programming using Java .....	3
CIT	141	Programming in C++ .....	4
CIT	171	Web Page Scripting .....	3
CIT	173	PHP Programming .....	3
CIT	210	Programming for Office Applications .....	3
CIT	233	Programming in Visual C++ .....	3
CIT	234	Objects and Components using Visual Basic.....	3
CIT	235	Enterprise Database Access using Visual Basic .....	3

## Associate in Applied Science and Career Certificates

CIT	236	Programming Using JavaBeans .....	3
CIT	237	Enterprise Java Development.....	3
CIT	238	C# Programming .....	3
CIT	241	Advanced C++ .....	3
CIT	270	Server Side Programming .....	3
CIT	271	Markup Language Programming .....	3
CIT	299	Selected Topics in CIT (with department approval) .....	1-3

### Non-programming

CIT	111	Comprehensive Spreadsheets.....	3
CIT	130	Operating Systems for A+ Certification.....	3
CIT	131	Windows Operating System.....	3
CIT	132	Linux Operating System.....	3
CIT	151	LAN Administration.....	3
CIT	152	Network Security Fundamentals .....	3
CIT	156	Digital Evidence Recovery.....	3
CIT	172	E-Commerce Implementation and Impact .....	3
CIT	211	Project Management Software .....	3
CIT	212	Oracle Database Administrator I .....	3
CIT	213	Oracle Database Administrator II.....	3
CIT	230	Linux System Administration.....	3
CIT	250	Advanced LAN Administration .....	3
CIT	251	Implementing and Administering Security in Windows .....	3
CIT	252	Hardening the Infrastructure .....	3
CIT	253	Network Defense and Countermeasures .....	3
CIT	256	Advanced Digital Evidence Recovery .....	3
CIT	257	Analysis of Digital Media .....	3
CIT	258	Network Forensics .....	4
CIT	299	Selected Topics in CIT (with department approval) .....	1-3
EWE	220	Cooperative Work Experience I .....	1-3

## COMPUTER FORENSICS

(Associate in Applied Science) Plan 22CU

### Required General Education Coursework .....

CMM	111	Communication Skills <i>or</i>	
CMM	121	Fundamentals of Speech <i>or</i>	
CMM	128	Interviewing Practices .....	3
ENG	120	Technical Composition I <i>or</i>	
ENG	121	English Composition I .....	3
PSY	121	Introduction to Psychology <i>or</i>	
PSY	122	Psychology in Business and Industry.....	3
PHI	125	Introduction to Ethics .....	3
		Science or Math Elective* .....	3

### Required Criminal Justice Coursework .....

CRJ	121	Introduction to Criminal Justice.....	3
CRJ	123	Introduction to Criminology I .....	3
CRJ	219	Principles of Criminal Investigations.....	3
CRJ	222	Criminal Procedural Law .....	3

### Required Computer Forensics Coursework .....

CIT	120	Introduction to Computers .....	3
CIT	131	Windows Operating System.....	3
CIT	132	Linux Operating System.....	3
CIT	150	Introduction to Local Area Networking .....	3
CIT	152	Network Security Fundamentals .....	3
CIT	155	Introduction to Computer Forensics.....	3
CIT	156	Digital Evidence Recovery.....	3
CIT	256	Advanced Digital Evidence Recovery .....	3
CIT	258	Network Forensics .....	4
CIT	259	Topics in Computer Forensics .....	1-3
ELT	151	PC Hardware Fundamentals.....	3

### Additional Required Coursework .....

SOC	223	Deviance .....	3
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### Total Hours for AAS Degree.....

62-64

## GAME DEVELOPMENT

(Associate in Applied Science) Plan 22CW

### Required General Education Coursework .....

CMM	111	Communication Skills <i>or</i>	
CMM	121	Fundamentals of Speech <i>or</i>	
CMM	128	Interviewing Practices .....	3
ENG	121	English Composition I .....	3
MTH	122	College Algebra <i>or</i>	
MTH		Elective (higher than MTH 122).....	3-4
PSY	121	Introduction to Psychology <i>or</i>	
PSY	122	Psychology in Business and Industry.....	3
		Humanities or Fine Arts Elective*# .....	3

### Required Business Coursework .....

BUS	121	Introduction to Business.....	3
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### Required CIT Coursework.....

CIT	120	Introduction to Computers .....	3
CIT	134	Programming Concepts using Visual Basic <i>or</i>	
CIT	136	Programming Concepts using Java .....	3
CIT	141	Programming in C++ .....	4
CIT	175	Game Development and Design Strategies.....	3
CIT	176	2-D Game Development.....	3
CIT	177	3-D Game Development.....	3
CIT	241	Advanced C++ .....	3
CIT	275	Mathematics for Game Development .....	3
CIT	276	Game Development Projects .....	3
		CIT Electives or Multimedia and Art Electives (see below) .....	12

### Additional Required Coursework .....

		Social Sciences Elective .....	3
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### Total Hours for AAS Degree .....

61

# HUM 127, PHI 122, or PHI 125 recommended.

### Electives:

Choose twelve hours from the following lists:

## Associate in Applied Science and Career Certificates

### CIT Electives

CIT 112	Comprehensive Database	3
CIT 135	Introduction to Visual Basic Programming	3
CIT 137	Object Oriented Programming Using Java	3
CIT 170	Creating Web Pages	3
CIT 171	Web Page Scripting	3
CIT 211	Project Management Software	3
CIT 233	Programming in Visual C++	3
CIT 239	Systems Analysis	3

### Multimedia and Art Electives

ART 149	Photographic Electronic Imaging I	3
ART 222	Introduction to Computer Art	3
ART 263	2D Computer Animation	3
ART 264	3D Computer Animation	3
DMD 111	Introduction to Multimedia	3
DMD 173	Introduction to Digital Sound	3
DMD 217	Multimedia Authoring	3
DMD 257	Interactive Animation	3

### OFFICE APPLICATION SPECIALIST (Certificate) Plan 22CG

The Office Application Specialist certificate prepares students to apply information technology concepts to solve problems and increase efficiency in the workplace. The certificate develops proficiency in software applications involving data manipulation and management.

Students earning this certificate will be proficient in productivity software applications including word processing, spreadsheets, databases and presentation software, as well as gain work-related knowledge of web page development.

AOS 113	Comprehensive Word Processing	3
AOS 215	Presentation Software	3
CIT 111	Comprehensive Spreadsheets	3
CIT 112	Comprehensive Database	3
CIT 170	Creating Web Pages	3
CIT 210	Programming for Office Applications	3
CIT 271	Markup Language Programming	3

**Total Hours for Certificate**.....21

### PC TECHNICIAN (Certificate) Plan 22CI

The PC technician certificate provides career training for students entering the computer technical support field. This certificate provides the training for individuals who install, maintain, upgrade and repair PC hardware and software. This certificate helps prepare the student for the A+ Certification exam. Proficiency credit through examination is available for CIT 120 and EET 170. Contact the Testing Center for more details.

CIT 120	Introduction to Computers	3
CIT 130	Operating Systems for A+ Certification	3
EET 170	DC Circuit Fundamentals	2
ELT 151	PC Hardware Fundamentals	3
ELT 152	PC Peripherals and Troubleshooting	3

**Total Hours for Certificate**.....14

### NETWORK ADMINISTRATION AND SECURITY (Certificate) Plan 22CK

The Network Administration and Security certificate prepares students for careers in designing and administering computer networks. In addition, coursework for this curriculum addresses how to keep networks secure from outside intrusion.

Computer Forensics coursework is included so students will learn procedures on securing evidence if network security has been breached. Students will be prepared to take several industry certification exams in the Network Administration, Network Security and Computer Forensics fields.

CIT 131	Windows Operating System	3
CIT 132	Linux Operating System	3
CIT 150	Introduction to Local Area Networking	3
CIT 151	LAN Administration <i>or</i>	
CIT 230	Linux System Administration	3
CIT 152	Network Security Fundamentals	3
CIT 155	Introduction to Computer Forensics	3
CIT 156	Digital Evidence Recovery	3
CIT 250	Advanced LAN Administration	3
CIT 251	Implementing and Administering Security in Windows	3
CIT 252	Hardening the Infrastructure	3
CIT 253	Network Defense and Countermeasures	3
CIT 256	Advanced Digital Evidence Recovery	3

**Total Hours for Certificate**.....36

### WEB PROGRAMMING (Certificate) Plan 22CN

The Web Programming Certificate provides students with the necessary skills to begin a career in web development. The student will learn to create web pages and interfaces using client- and server-side programming for the development of web applications. The student will also develop web pages incorporating database applications and components, which will include database administration, security and maintenance.

CIT 113	Introduction to SQL	3
CIT 170	Creating Web Pages	3
CIT 171	Web Page Scripting	3
CIT 173	PHP Programming	3
CIT 270	Server Side Programming	3
CIT 271	Markup Language Programming	3

**Total Hours for Certificate**.....18

## Associate in Applied Science and Career Certificates

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### C++ PROGRAMMING (Certificate) Plan 22CO

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The C++ Programming certificate is centered in object oriented technologies. The certificate is intended to enhance programming skills by providing knowledge and experience in the C++ language in a minimal amount of time. It includes interaction with databases and the utilization of a systems approach to problem solving.

CIT	113	Introduction to SQL .....	3
CIT	141	Programming in C++ .....	4
CIT	233	Programming in Visual C++ .....	3
CIT	239	Systems Analysis .....	3
CIT	241	Advanced C++ .....	3

**Total Hours for Certificate.....16**

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### JAVA PROGRAMMING (Certificate) Plan 22CP

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The Java Programming certificate is centered in object oriented technologies. This certificate is intended to enhance programming skills by providing knowledge and experience in the Java language in a minimal amount of time. It includes interaction with databases and the utilization of a systems approach to problem solving.

CIT	113	Introduction to SQL .....	3
CIT	137	Object Oriented Programming using Java ....	3
CIT	236	Programming Using JavaBeans .....	3
CIT	237	Enterprise Java Development.....	3
CIT	271	Markup Language Programming .....	3

**Total Hours for Certificate.....15**

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### VISUAL BASIC PROGRAMMING (Certificate) Plan 22CQ

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The Visual Basic Programming certificate is centered in object oriented technologies. It is intended to enhance programming skills by providing knowledge and experience in the Visual Basic language in a minimal amount of time. It includes interaction with databases and the utilization of a systems approach to problem solving.

CIT	113	Introduction to SQL .....	3
CIT	135	Introduction to Visual Basic Programming.....	3
CIT	234	Objects and Components Using Visual Basic.....	3
CIT	235	Enterprise Database Access using Visual Basic.....	3
CIT	239	Systems Analysis .....	3

**Total Hours for Certificate.....15**

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### COMPUTER FORENSICS TECHNICIAN (Certificate) Plan 22CS

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This certificate is designed for individuals in both law enforcement and the private sector who wish to learn the skills needed to become a Computer Forensics Technician. The primary responsibility of a Computer Forensics Technician is to investigate and secure evidence on computer hard drives. In addition, a Computer Forensics Technician must also be skilled in crime scene note-taking and report writing.

CIT	120	Introduction to Computers .....	3
CIT	131	Windows Operating System.....	3
CIT	132	Linux Operating System.....	3
CIT	155	Introduction to Computer Forensics.....	3
CIT	156	Digital Evidence Recovery.....	3
ELT	151	PC Hardware Fundamentals.....	3

**Total Hours for Certificate.....18**

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### COMPUTER FORENSICS ANALYST (Certificate) Plan 22CT

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This certificate is designed for individuals in both law enforcement and the private sector who wish to learn the skills needed to become a Computer Forensics Analyst. The primary responsibility of a Computer Forensics Analyst is to investigate, secure, and analyze evidence on computer hard drives and networks. In addition to courses in Computer Forensics, Operating Systems, and Networking, Network Security courses are included to prepare students for Computer Forensics careers. Students will learn crime scene notetaking, report writing, and presentation of findings.

CIT	120	Introduction to Computers .....	3
CIT	131	Windows Operating System.....	3
CIT	132	Linux Operating System.....	3
CIT	150	Introduction to Local Area Networks.....	3
CIT	152	Network Security Fundamentals .....	3
CIT	155	Introduction to Computer Forensics.....	3
CIT	156	Digital Evidence Recovery.....	3
CIT	256	Advanced Digital Evidence Recovery .....	3
CIT	258	Network Forensics .....	4
CIT	259	Topics in Computer Forensics .....	1-3
ELT	151	PC Hardware Fundamentals.....	3

**Total Hours for Certificate .....32-34**

**SECURITY ADMINISTRATION  
(Certificate) Plan 22CV**

The Security Administration certificate is designed for students who currently are employed as Network Administrators or have taken courses in Network Administration. Coursework for this certificate addresses how to keep networks secure from outside intrusion and procedures on securing evidence if network security has been breached.

CIT 152	Network Security Fundamentals .....	3
CIT 155	Introduction to Computer Forensics.....	3
CIT 156	Digital Evidence Recovery.....	3
CIT 251	Implementing and Administering Security in Windows .....	3
CIT 252	Hardening the Infrastructure .....	3
CIT 253	Network Defense and Countermeasures .....	3
CIT 256	Advanced Digital Evidence Recovery .....	3
CIT 258	Network Forensics .....	4

**Total Hours for Certificate.....25**

**GAME DEVELOPMENT  
(Certificate) Plan 22CX**

The Game Development Certificate is for those students who desire to be employed in the video game industry as game developers. Upon completion of this certificate, students will have the knowledge and skill in game strategies, game programming and mathematics to qualify for entry-level game development employment.

CIT 120	Introduction to Computers .....	3
CIT 134	Programming Concepts using Visual Basic <i>or</i>	
CIT 136	Programming Concepts using Java .....	3
CIT 141	Programming in C++ .....	4
CIT 175	Game Development and Design Strategies.....	3
CIT 176	2-D Game Development.....	3
CIT 177	3-D Game Development.....	3
CIT 241	Advanced C++ .....	3
CIT 275	Mathematics for Game Development .....	3
CIT 276	Game Development Projects .....	3

**Total Hours for Certificate.....28**

**ORACLE ADMINISTRATOR CERTIFIED  
ASSOCIATE  
(Certificate) Plan 22CY**

This certificate provides students with the knowledge and skills needed to sit for the Oracle Database Administrator Certified Associate certification exam. The curriculum for the Oracle Administrator Certified Associate certificate uses coursework supplied by Oracle. College of Lake County is a member of the Oracle Academic Initiative which gives CLC access to Oracle software, coursework, and other items used in our Oracle classes.

CIT 112	Comprehensive Database .....	3
CIT 113	Introduction to SQL .....	3
CIT 212	Oracle Database Administration I .....	3

**Total Hours for Certificate.....9**

**ORACLE ADMINISTRATOR CERTIFIED  
PROFESSIONAL ASSOCIATE  
(Certificate) Plan 22CZ**

This certificate provides students with the knowledge and skills needed to sit for the Oracle Database Administrator Certified Professional certification exam. The curriculum for the Oracle Administrator Certified Professional certificate uses coursework supplied by Oracle. College of Lake County is a member of the Oracle Academic Initiative which gives CLC access to Oracle software, coursework, and other items used in Oracle classes.

CIT 112	Comprehensive Database .....	3
CIT 113	Introduction to SQL .....	3
CIT 212	Oracle Database Administration I .....	3
CIT 213	Oracle Database Administration II.....	3

**Total Hours for Certificate.....12**

For more information on recommended courses or program specific advising, contact the following faculty members or the Business Division at (847) 543-2041:

Changyi Chen	Dan Dainton	Ellen Dykeman
Sanjay Kumar	John North	Bob Scherbaum