

# INFORMATION TECHNOLOGY CERTIFICATES

## A+ Certification Certificate:

### Courses required:

ET	107	Computer Applications for Technicians OR	4
CIS	130	Microcomputer Applications	(3)
ET	232	Computer Software Maintenance	3
ET	234	Computer Hardware Maintenance	3
<b>Total Credits</b>			<b>9-10</b>

## Computer Programming Certificate:

Upon completion of the option/certificate, the student can:

1. use a software development kit or environment to write, compile, debug test and run programs of varying degrees of difficulty;
2. write programs that use operators and assignment statements correctly;
3. write programs that take advantage of a graphical user interface;
4. write programs that use predefined and user-defined data types correctly;
5. write programs that use arrays correctly;
6. write programs that use repetition techniques such as for loops, do-while loops, while loops, and nested loops;
7. develop internal and external documentation (hard copy and on-line);
8. write programs that use decision-making techniques such as if statements, nested if statements and multi-way decisions;
9. write programs that recover gracefully from error conditions;
10. write programs that can respond to several forms of user input, including, but not limited to, mouse clicks, keyboard input and output operations to character and binary streams;
11. write programs that can print;
12. write programs that take advantage of network or database connectivity;
13. understand fundamental program design concepts: structured, procedural, and object-oriented;
14. demonstrate fundamental knowledge of business principles and practices;
15. demonstrate ability to execute all stages of a program development cycle.

### Courses required:

CIS	120	Program Design and Development	3
CIS	220	Systems Analysis and Design	3
COE	199	Cooperative Education OR	3
CIS	280	Internship	(3)
ACC	201	Financial Accounting I	3
		Beginning Programming Language	3
		Programming Languages*	12
		<i>(*must include at least 6 credit hours above the beginning)</i>	
		Management Course	3
<b>Total Credits</b>			<b>30</b>

## Cisco Networking Enhanced Certificate:

### Courses required:

IT	120	Cisco Internetworking I	4
IT	122	Cisco Internetworking II	4

IT	220	Cisco Internetworking III	4
IT	222	Cisco Internetworking IV	4
NIS	213	Administering Microsoft Windows Server OR	3
NIS	230	UNIX Administration	(3)
		Technical Electives (Network Administration)	6
<b>Total Credits</b>			<b>25</b>

### **Database Administration – Enhanced Certificate:**

*(Prerequisite: Moderate knowledge of industry-standard microcomputer operating systems, application software, computer program design and development techniques, and familiarity with at least one programming language)*

This certificate is intended for students wishing to upgrade or acquire new vocational skills in the fields of database administration, database design, and programming with database management systems. The course of study includes a foundation in business information systems, database theory and design, a procedural programming language, and a database language. Upon completion of the option/certificate, the graduate will be qualified to take industry designed and recognized certification examinations.

#### **Oracle Track:**

##### **Courses required:**

IT	170	Introduction to Database Design	3
IT	147	SQL Programming	3
IT	270	Database Systems – Implementation and Management	3
IT	272	Oracle Database Fundamentals I	3
IT	274	Oracle Database Fundamentals II	3
IT	278	Oracle Performance Tuning	3
NIS	213	Administering Microsoft Windows Server OR	3
NIS	230	UNIX Administration	(3)
<b>Total Credits</b>			<b>21</b>

#### **Microsoft Track:**

##### **Courses required:**

IT	170	Introduction to Database Design	3
IT	147	SQL Programming	3
IT	270	Database Systems – Implementation and Management	3
NIS	246	Microsoft SQL Server Administration	3
NIS	247	Microsoft SQL Server Implementation	3
NIS	248	Microsoft SQL Server Data Warehousing	3
NIS	213	Administering Microsoft Windows Server	3
<b>Total Credits</b>			<b>21</b>

### **Web/Database Programmer Certificate:**

*(Prerequisite: Fundamental knowledge of industry-standard microcomputer operating systems, applications software, computer program design and development techniques, and at least one programming language)*

#### **Oracle Track:**

##### **Courses required:**

IT	170	Introduction to Database Design	3
IT	147	SQL Programming	3
IT	272	Oracle Database Fundamentals I	3

BA/CIS	151	Introduction to Electronic Commerce	3
IT	132	Web Page Development or	3
CIS	152	Introduction to Web Page Design and	(1)
CIS	153	Intermediate Web Page Design	(2)
IT	230	Advanced Web page Design	3
IT	235	Data-Driven Web Design	3
IT	291	E-Commerce Practicum: Site Implementation Programming Course (scripting preferred)	3
<b>Total Credits</b>			<b>27</b>

### Microsoft Track:

#### Courses required:

IT	170	Introduction to Database Design	3
IT	147	SQL Programming	3
NIS	246	Microsoft SQL Server Administration	3
BA/CIS	151	Introduction to Electronic Commerce	3
IT	132	Web Page Development or	3
CIS	152	Introduction to Web Page Design and	(1)
CIS	153	Intermediate Web Page Design	(2)
IT	230	Advanced Web page Design	3
IT	235	Data-Driven Web Design	3
IT	291	E-Commerce Practicum: Site Implementation Programming Course (scripting preferred)	3
<b>Total Credits</b>			<b>27</b>

#### Electronic Commerce Certificate:

Upon completion of this option/certificate, the student can:

1. demonstrate a basic knowledge of business concepts;
2. develop an effective marketing plan;
3. identify key concepts of consumer behavior and customer service;
4. demonstrate understanding of basic accounting principles for transaction processing and record keeping;
5. use electronic media tools to plan for opportunities and changes in business operations;
6. use appropriate software to create, edit and enhance graphics, video and sound for use in a web page;
7. create interactive web pages using scripting;
8. import digital multimedia into web sites;
9. use appropriate scripting technologies to enhance a web site;
10. integrate data-based information into web pages;
11. install and configure a web server;
12. design a functional and an attractive e-commerce web site.

#### Courses required:

B&E	100	Introduction to Business and Economics OR	1
BA	160	Introduction to Business	(3)
BA	282	Principles of Marketing	3
ACC	201	Financial Accounting I	3
BA/CIS	151	Introduction to Electronic Commerce	3
IT	130	Web Site Design and Production OR	4
IT	132	Web Page Development	(3)

IT	230	Advanced Web Page Design	3
IT	235	Data-Driven Web Design	3
IT	291	E-Commerce Practicum: Site Implementation	3
<b>Total Credits</b>			<b>26-28</b>

### **Information System Support Certificate:**

Upon completion of this certificate, the student can:

1. demonstrate an advanced knowledge of software packages such as word-processing, spreadsheet, database, and presentation;
2. demonstrate a basic understanding of desktop publishing software;
3. deliver quality technical Customer Support;
4. demonstrate strong listening and communication skills;
5. demonstrate superior customer service skills;
6. successfully solve and prevent problems;
7. work as part of a team;
8. manage his/her stress, time and workload;
9. describe a traditional help desk and help desk trends;
10. understand incident and call process flows;
11. use basic help desk tools; and
12. demonstrate fundamental knowledge of business management principles and practices.

### **Courses required:**

ET	107	Computer Applications for Technician OR	4
CIS	130	Microcomputer Applications	(3)
CIS	110	Operating Systems Concepts OR	3
ET	232	Computer Software Maintenance	(3)
CIS	230	Advanced Microcomputer Applications	3
OST	225	Introduction to Desktop Publishing	3
IT	237	Help Desk I: Customer Service Skills	3
IT	238	Help Desk II: Help Desk Tools	3
COE	199	Cooperative Education OR	3
CIS	280	Internship	(3)
		Technical Electives (Information System Support)	6
<b>Total Credits</b>			<b>27-28</b>

### **Information Technology Fundamentals Certificate:**

#### **Courses required:**

CIS	120	Program Design and Development	3
CIS	130	Microcomputer Applications OR	3
ET	107	Computer Applications for Technicians	(4)
ET	232	Computer Software Maintenance OR	3
CIS	110	Operating Systems Concepts	(3)
ET	234	Computer Hardware Maintenance	3
NIS	160	Networking Core Technologies	3
IT	130	Web Site Design and Production OR	4
IT	132	Web Page Development	3
IT	170	Introduction to Database Design	3
		Beginning Level Programming Language	3
<b>Total Credits</b>			<b>24-25</b>

**Network Administration Microsoft MCSA Track Certificate:**

**Courses required:**

NIS	160	Networking Core Technologies	3
NIS	211	Administering Microsoft Windows Professional: Topic	3
NIS	213	Administering Microsoft Windows Server: Topic	3
NIS	214	Supporting Windows Network Infrastructure	3
NIS	216	Implementing & Administering Microsoft Windows Directory Services	3
ET	232	Computer Software Maintenance	3
ET	234	Computer Hardware Maintenance	3
<b>Total Credits</b>			<b>21</b>