

Information Management Systems – MIS & CSC



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Management Information Systems and Computer Science

(Effective August 17, 2015)

A.A.S. Degree - MIS

Concentrations:

Database Management
Web Development
Application Development

A.S. Degree

Computer Science
Engineering

Certificates:

Website Developer
Website Designer
Multimedia Designer
E-Commerce Assistant
Business Skills

Certificates (*cont.*):

Software Developer
Programming Skills
Visual Basic .NET Programmer
C# Programmer
Java Programmer
PHP Programmer
iOS Programmer
iOS Developer
Android Programmer
Android Developer
Mobile Application Developer
Small Database Administrator
Database Administration Skills
Associate Database Administrator

Computer Science and Management Information Systems



Welcome!

We're so glad that you are interested in pursuing an education in the field of Management Information Systems or Computer Science!

Whether you are interested in pursuing a degree or certificate or are looking to renew or develop a new skill set, the Information Management Systems Department has a variety of courses from which to select. We take tremendous pride in offering our students classes that cover the most up-to-date technologies in our state-of-the-art computer labs.

Please take some time to review our degrees, certificates, and course offerings; and if you have any questions, please ask your teacher, a coordinator, or the IMS department chair, Michelle August.

The IMS Department

The Information Management Systems Department is comprised of four distinct areas: Management Information Systems, Information Management Systems, Office Systems Applications, and Computer Science. Depending on the degree or certificate you are pursuing, you may take courses in one, two, three, or all four of these areas.

Visit our website at <http://www.morainevalley.edu/ims> to obtain more information about our talented faculty, careers in Management Information Systems, and up-to-date course information.

Packet Information

If you are a New Student:

This is your packet!

If you are a new student or a student who started classes since fall 2015, this is your packet. You will need to follow the requirements outlined for the degree or certificate that you wish to pursue. Included in this packet is a schedule of course offerings so that you can map out your plan of study.

Current Students:

If you are a current student who started before fall 2015, you may use this packet or you may use the packet that was current when you started taking courses to chart out your plan of study for the degree or certificate you would like to pursue.

Course Registration

Register early before classes are canceled! Classes with low enrollment are canceled one week before the semester begins.

Graduation Petition Deadlines

All students pursuing an associate's degree or certificate must petition for graduation by the appropriate deadline indicated below:

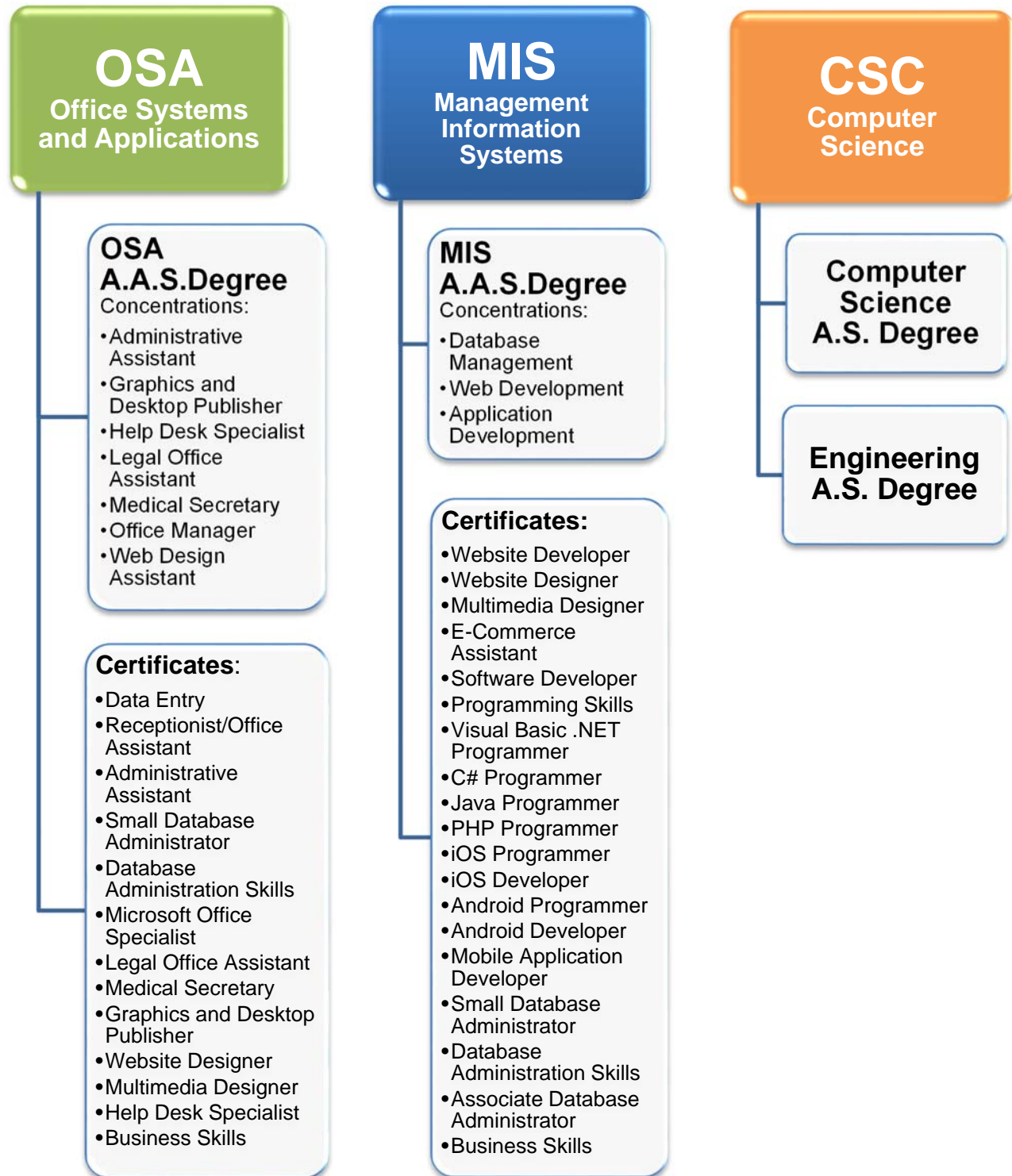
Spring graduation (May)	February 1
Summer graduation (August)	June 1
Fall graduation (December)	September 15

Questions?

If you have any questions about our courses, certificates, or degrees, we are always happy to help. Contact one of the IMS faculty members about the area of study that interests you.

Information Management Systems

The IMS Department is divided into three areas—OSA, MIS, and CSC.
There are two curriculum packets—the **OSA Packet**, and the **MIS & CSC Packet**.
In each packet are the specific course requirements for each degree and certificate.



For more information, navigate to www.morainevalley.edu/ims. Students pursuing certificates and degree programs prior to August 17, 2015, may continue the programs in place at the time they enrolled. For questions and more information, contact a program coordinator.

Course → Certification Roadmap

Course(s)	Certification the Course Helps Prepare for*
IMS 101 ▲	IC3
IMS 215	Microsoft Office Specialist Access, Excel, PowerPoint, and Word
MIS 111 ▲	CIW Internet Business Associate (1D0-61A)
MIS 254, MIS 239, and MIS 123	MTA Software Development Fundamentals (98-361)
MIS 121 ▲	MTA Networking Fundamentals (98-366)
MIS 146 ▲	MTA Mobility and Devices Fundamentals (98-368)
MIS 292	MTA Database Administration Fundamentals (98-364)
MIS 141, MIS 241, and OSA 125	MTA HTML5 Application Development Fundamentals (98-375)
MIS 285	MTA Software Development Fundamentals (98-361)
OSA 236	ACA Visual Communication using Adobe Photoshop
OSA 135	ACA Web Authoring using Adobe Dreamweaver
OSA 138	ACA Video Communication using Adobe Premiere
OSA 234	ACA Graphic Design & Illustration using Adobe Illustrator
OSA 235	ACA Print & Digital Media Publication using Adobe InDesign
OSA 122 ▲	Microsoft Office Specialist Excel
OSA 116 ▲	Microsoft Office Specialist Outlook
OSA 145 ▲	Microsoft Office Specialist Word
OSA 230	Microsoft Office Specialist PowerPoint
OSA 257 ▲	Microsoft Office Specialist Access
OSA 249	Intuit QuickBooks Certified User
MIS A.A.S. Degree	COMMON Business Computing Associate

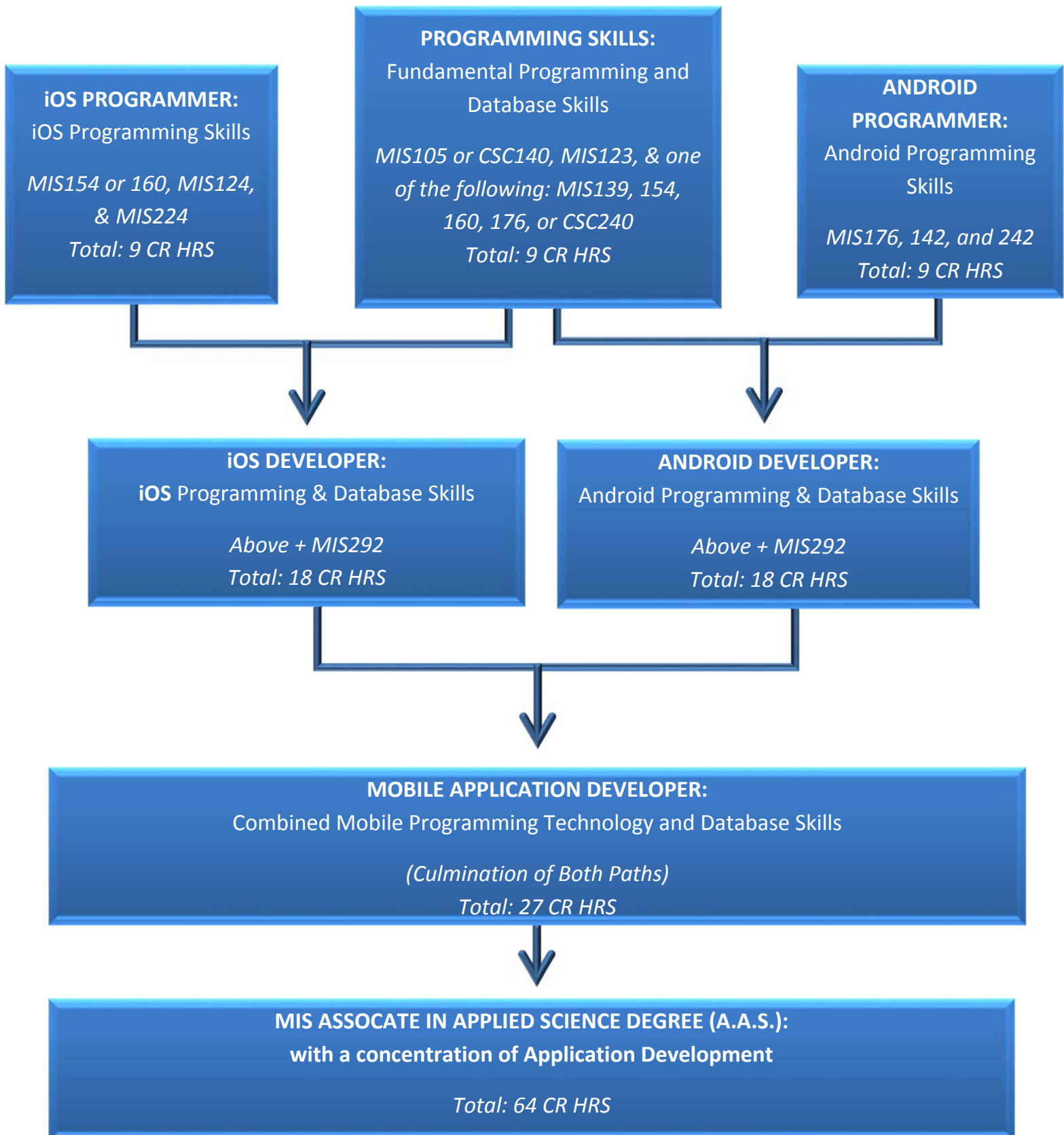
★ With use of test-specific training provided with the course when available

▲ Certification can count as a proficiency credit for these courses only. Paperwork must be filed and fee paid.



Questions? Contact Carol Boyle, Certification Coordinator
boylec@morainevalley.edu or (708) 974-5444

MIS Mobile Application Development Path



MIS Database Administration Path

SMALL DATABASE ADMINISTRATOR:
Skills to Build and Administer a Single-user Database
*This certificate aligns to the MOS Access exam.
IMS115 & OSA257; Total: 6 CR HRS



DATABASE ADMINISTRATION SKILLS:
Foundational Skills in Database Design and Administration
*This certificate aligns to the MTA Database Administration Fundamentals exam.
Above + MIS 123 & 292; Total: 12 CR HRS



ASSOCIATE DATABASE ADMINISTRATOR:
Database Design and Management Skills; Emphasis on Database Design Principles,
Structured Query Language, and Database Administration
Above + MIS105 or CSC140, MIS291, & MIS294; Total: 18 CR HRS



MIS ASSOCIATE IN APPLIED SCIENCE DEGREE (A.A.S.)
Total: 64 CR HRS

IMS Course Offering Schedule

**Information Management Systems
Course Offering Schedule
Fall 2015 – Summer 2017**

Legend:	D = Daytime
	E = Evening
	W = Weekend
	OL = Online
	H = Hybrid
	WDN = Withdrawn due to low enrollment

Course	Fall 15	Spring 16	Summer 16	Fall 16	Spring 17	Summer 17
CSC 140	D/OL/H	D/OL/H	D/OL	D/OL/H	D/OL/H	D/OL
CSC 240		D			D	
IMS 100	D/E	D/E	D/E	D/E	D/E	D/E
IMS 101	D/OL	D/OL	E/OL	E	D/OL	E/OL
IMS 108	D	E		D	E	
IMS 115	D/E/OL/H	D/E/OL/H	D/E/OL	D/E/OL/H	D/E/OL/H	D/E/OL
IMS 215		E			E	
MIS 105	D/E/OL	D/E/OL	E	D/E/OL	D/E/OL	E
MIS 111	H/E/OL	D/H/OL	OL	H/E/OL	D/H/OL	OL
MIS 120						
MIS 121		E			E	
MIS 123	E/OL	E/OL		E/OL	E/OL	
MIS 124	E			E		
MIS 126	E	A		E	A	
MIS 139		H	OL		H	OL
MIS 141	OL	E	OL	OL	E	OL
MIS 142		H			H	
MIS 146	E	E	E	E	E	E
MIS 154	E			E		
MIS 160			OL			OL
MIS 176	E			E		
MIS 197						
Special Topics courses (199/200) may be offered if sufficient student interest is expressed.						
MIS 199	Object-Oriented CSS	TBA				
MIS 200	Foundations of SW Testing	Foundations of IBM i on Power	TBA			
MIS 210		E			E	
MIS 220						
MIS 224		E			E	
MIS 226		E			E	
MIS 239	H			H		
MIS 241	E	OL		E	OL	
MIS 242		H			H	
MIS 251						
MIS 254		E			E	
MIS 259						
MIS 261	Contact Ed Martig for information about these courses (Martig@morainevalley.edu)					
MIS 264						
MIS 276		E			E	
MIS 283	E			E		
MIS 285		H			H	
MIS 286	Contact Ed Martig for information about these courses (Martig@morainevalley.edu)					
MIS 289						
MIS 291	E			E		
MIS 292	OL	E		OL	E	
MIS 294	E			E		
MIS 295		OPEN			OPEN	
MIS 297		E			E	
MIS 298						

IMS Course Offering Schedule

Course	Fall 15	Spring 16	Summer 16	Fall 16	Spring 17	Summer 17
OSA 100	D/E	D/E	E	D/E	D/E	E
OSA 102	E	D		E	D	
OSA 103	D/E	D		D/E	D	
OSA 104	D/E	D/E	E	D/E	D/E	E
OSA 116	E	E	E	E	E	E
OSA 122	D/E	E/OL		D/E	E/OL	E
OSA 125	H			H		
OSA 135		E			E	
OSA 138	E			E		
OSA 145	E	OL	E	E	OL	
OSA 225		H			H	
OSA 230	E	H		E	H	
OSA 232	E	E		E	E	
OSA 234	E			E		
OSA 235		E			E	
OSA 236		E			E	
OSA 238		E			E	
OSA 243		E			E	
OSA 246		E			E	
OSA 249	E	D		E	D	
OSA 250	E			E		
OSA 252		E			E	
OSA 255	E			E		
OSA 257	OL	E		OL	E	
OSA 258		OPEN			OPEN	
OSA 260	H			H		

Legend: H = Hybrid Offering (Most of the course is online, some campus meetings required)
 D = Daytime Offering
 E = Evening Offering
 W = Weekend Offering
 OL = Online Offering
 WDN = Withdrawn due to low enrollment

Faculty and Students Please Note: This schedule was created in good faith, based on past and predicted enrollments, to assist students in the planning of their coursework. If circumstances change regarding curriculum, this schedule may need to be altered!

Here are names and e-mail addresses of faculty members who can assist you with questions:

Nancy Woodard (IMS Program Coordinator) Woodard@morainevalley.edu

Cathi Predl (OSA Program Coordinator and Internship Coordinator) Predl@morainevalley.edu

Ed Martig (MIS Program Coordinator and Internship Coordinator) Martig@morainevalley.edu

Michelle August, IMS Department Chairperson, August@morainevalley.edu

**Management Information Systems
A.A.S. Degree
Curriculum Code #1206**

This program prepares students for pursuit of careers in information technology. Graduates qualify for information systems support staff positions such as applications trainers, technical support, software support, and database, web, and programming applications trainees. Students may specialize in IT areas including database, web, or applications concentrations. Students will use state-of-the-art technology to complete their coursework. Students with work experience and advanced skills should contact the internship coordinator for assessment and course substitution information. Students without prerequisite skills are expected to take the necessary additional courses. An important feature of this program is the internship component where students seek on- the-job training in a professional setting. Students wishing to enroll in the internship should contact the internship coordinator prior to enrollment.

Required General Education Courses- 16 credits as follows:

COM 101	Composition I	3	
COM 103	Speech Fundamentals	3	
	Select three credits from ANT, ECO, GEO, HIS, PSC, PSY, SOC, SSC, ART, FRE, GER, HUM, JPN, LIT, MUS, PHI, SPA, THE	3	
BUS 120	Business Mathematics	3	
OR MTH 120	General Education Mathematics	3	
	Select four credits from BIO, CHM, EAS, GEL, NAT, PHY, PHS	4	
			<u>16</u>

Required Career Courses-21 credits as follows:

IMS101	Introduction to Computer Systems		
OR IMS 115	Microsoft Office I	3	
CSC 140	Introduction to Computer Science		
OR MIS 105	Programming Principles	3	
MIS 111	Internet Technologies	3	
MIS 121	Networking for Business	3	
MIS 123	Database Design	3	
MIS 146	Operating Systems	3	
MIS 295	Internship	3	
			<u>21</u>

Concentrations

Students may select Database Management, Web Development, or Application Development.

Database Management (27 credits)
Required Special Career Courses as follows:

LAN 121	Network Essentials – Network +	3	
LAN 122	Network Services	4	
LAN 233	Managing Database Services	3	
LAN 253	Managing Network Security I	3	
MIS 210	Project Management	3	
MIS 291	Systems Analysis and Design	3	
MIS 292	SQL/Database Applications	3	
MIS 294	Oracle Database Management	3	
	Choose at least <u>two credits (1 course)</u> from the following:		
BUS 107	Fundamentals of Accounting	2	
LAN 263	Managing Network Security II	3	
OSA 257	Microsoft Access	3	
			<u>27</u>

Web Development (27 credits)
Required Special Career Courses-18 credits as follows:

OSA 125*	Introduction to Website Design	
OR OSA 135*	Website Applications	3
MIS 141	Website Development: HTML & CSS	3
Choose 6 credits (one must be an MIS course) from:		
	MIS 210, MIS 291, BUS 105, BUS 130, BUS 131, BUS 134, BUS 136, BUS 200, BUS 230, BUS 231	6
MIS 241	Advanced Website Development: JavaScript & jQuery	3
MIS 292	SQL/Database Applications	3

Choose one track (9 credit hours):

Java Programmer Track (9 credit hours)		C# Programmer Track (9 credit hours)	
MIS 176 Java Programming I	3	MIS 154 C# Programming I	3
MIS 276 Java Programming II	3	MIS 254 C# Programming II	3
MIS 283 Java Web Applications	3	MIS 285 ASP .NET Web Applications	3
Visual Basic .NET Programmer Track (9 credit hours)		PHP Programmer Track (9 credit hours)	
MIS 139 VB .NET Programming I	3	MIS 126 PHP Programming I	3
MIS 239 VB .NET Programming II	3	MIS 226 PHP Programming II	3
MIS 285 ASP .NET Web Applications	3	MIS 297 Data-Driven Websites	3
Multimedia Programmer Track (9 credit hours)			
MIS 251 ColdFusion Programming	3		
MIS 259 Flash ActionScript	3		
MIS 297 Data-Driven Websites	3		

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* NOTE: OSA 125 is recommended for students pursuing the VB .NET or C# Programmer Tracks;
OSA 135 is recommended for students pursuing the Java, PHP, or Multimedia Programmer Tracks

Application Development (27 credits)
Required Special Career Courses- 9 credits as follows:

MIS 210	Project Management	3
MIS 291	Systems Analysis and Design	3
MIS 292	SQL/Database Applications	3

Choose one track (9 credit hours):

Visual Basic.NET Programmer Track (9 credit hours)		C# Programmer Track (9 credit hours)	
MIS 139 VB .NET Programming I	3	MIS 154 C# Programming I	3
MIS 239 VB .NET Programming II	3	MIS 254 C# Programming II	3
MIS 285 ASP .NET Web Applications	3	MIS 285 ASP .NET Web Applications	3
Or MIS 289 Advanced .NET Development		Or MIS 289 Advanced .NET Development	
Java Programmer Track (9 credit hours)		iOS Programmer Track (9 credit hours)	
MIS 176 Java Programming I	3	CSC 140 Introduction to Computer Science	
MIS 276 Java Programming II	3	Or MIS 154 C# Programming I	
MIS 283 Java Web Applications		Or MIS 160 C++ Programming	
Or MIS 286 Advanced Java Development	3	Or MIS 176 Java Programming I	3
		MIS 124 iOS Programming I	3
		MIS 224 iOS Programming II	3
Android Programmer Track (9 credit hours)			
MIS 176 Java Programming I	3		
MIS 142 Android Programming I	3		
MIS 242 Android Programming II	3		

Application Development (Continued)
Choose another track (6 credit hours not duplicating selections from the prior track):**

Visual Basic.NET Programming Track (6 credit hours) MIS 139 VB .NET Programming I 3 MIS 239 VB .NET Programming II 3	C# Programming Track (6 credit hours) MIS 154 C# Programming I 3 MIS 254 C# Programming II 3
Java Programming Track (6 credit hours) MIS 176 Java Programming I 3 MIS 276 Java Programming II 3	PHP Programming Track (6 credit hours) MIS 126 PHP Programming I 3 MIS 226 PHP Programming II 3 NOTE: MIS 141 prerequisite required as elective.
iOS Programming Track (6 credit hours) CSC 140 Introduction to Computer Science Or MIS 154 C# Programming I Or MIS 160 C++ Programming Or MIS 176 Java Programming I 3 MIS 124 iOS Programming I 3	Android Programming Track (6 credit hours) MIS 176 Java Programming I 3 MIS 142 Android Programming I 3
RPG Programming Track (6 credit hours) MIS 120 RPG Programming I 3 MIS 220 RPG Programming II 3	Web Client Scripting Track (6 credit hours) MIS 141 Website Development: HTML & CSS 3 MIS 241 Adv. Website Dev.: JavaScript & jQuery 3
E-Commerce Development Track (6 credit hours) MIS 197 E-Commerce Development 3 MIS 297 Data-Driven Websites 3	Web Design Track (6 credit hours) OSA 125 Introduction to Website Design 3 OSA 135 Website Applications 3
Web Development Track (6 credit hours) MIS 251 ColdFusion Programming 3 MIS 297 Data-Driven Websites 3	

Elective Courses (Select 3 Credit Hours that have not been selected above):

CSC 140 Introcuton to Computer Science 3	MIS 242 Android Programming II 3
CSC 240 Advanced Computer Science 3	MIS 251 ColdFusion Programming 3
MIS 120 RPG Programming I 3	MIS 254 C# Programming II 3
MIS 124 iOS Programming I 3	MIS 259 Flash ActionScript 3
MIS 126 PHP Programming I 3	MIS 261 C++ Programming II 3
MIS 139 VB .NET Programming I 3	MIS 264 C++ Software Development 3
MIS 141 Website Development: HTML & CSS 3	MIS 276 Java Programming II 3
MIS 142 Android Programming I 3	MIS 283 Java Web Applications 3
MIS 154 C# Programming I 3	MIS 285 ASP .NET Web Applications 3
MIS 160 C++ Programming 3	MIS 286 Advanced Java Development 3
MIS 176 Java Programming I 3	MIS 289 Advanced .NET Development 3
MIS 197 E-Commerce Development 3	MIS 294 Oracle Database Management 3
MIS 199 Special Short Topics in Technology * 1	MIS 297 Data-Driven Websites 3
MIS 200 Special Topics in Technology * 3	OSA 125 Introduction to Website Design 3
MIS 224 iOS Programming II 3	OSA 135 Website Applications 3
MIS 226 PHP Programming II 3	OSA 234 Adobe Illustrator 3
MIS 241 Adv. Website Dev.: JavaScript & jQuery 3	OSA 236 Adobe Photoshop 3

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NOTE: A course may not be used more than once when earning a degree/certificate. If you choose tracks that have duplicate courses, you will need to choose (an) additional elective(s) to earn the required number of credit hours.

* **NOTE:** MIS 199 and MIS 200 can be repeated up to 3 times for credit as long as different topics are selected.

** **NOTE:** Courses from each track can be pursued simultaneously.

Total Credit Hours for Degree: 64

**Website Developer Certificate
Curriculum Code: #1433**

This certificate is designed for the experienced computer user who has strong skills in Microsoft Windows navigation and computer applications packages. Students who are interested in beginning a career in Website Development and who do not possess these prerequisite skills should meet with a coordinator to plan appropriate course selection.

This program prepares students for positions as web developers.

Required Career Courses – 36 credit hours as follows:

Course	Name	Credit Hours
CSC 140	Introduction to Computer Science	
OR MIS 105	Programming Principles	3
MIS 111	Internet Technologies	3
MIS 121	Networking for Business	3
MIS 123	Database Design	3
MIS 141	Website Development: HTML & CSS	3
MIS 241	Advanced Website Development: JavaScript & jQuery	3
MIS 292	SQL/Database Applications	3
Choose 3 credits from:		
	MIS 210, MIS 291, BUS 105, BUS 130, BUS 131, BUS 134, BUS 136, BUS 200, BUS 230, BUS 231	3
OSA 125*	Introduction to Website Design	
OR OSA 135*	Website Applications	3

Choose one track (9 credit hours):

Java Programmer Track (9 credit hours)		C# Programmer Track (9 credit hours)	
MIS 176 Java Programming I	3	MIS 154 C# Programming I	3
MIS 276 Java Programming II	3	MIS 254 C# Programming II	3
MIS 283 Java Web Applications	3	MIS 285 ASP .NET Web Applications	3
Visual Basic .NET Programmer Track (9 credit hours)		PHP Programmer Track (9 credit hours)	
MIS 139 VB .NET Programming I	3	MIS 126 PHP Programming I	3
MIS 239 VB .NET Programming II	3	MIS 226 PHP Programming II	3
MIS 285 ASP .NET Web Applications	3	MIS 297 Data-Driven Websites	3
Multimedia Programmer Track (9 credit hours)			
MIS 251 ColdFusion Programming	3		
MIS 259 Flash ActionScript	3		
MIS 297 Data-Driven Websites	3		

Total Credit Hours: 36

*NOTE: OSA 125 is recommended for students pursuing the VB .NET or C# Programmer Tracks;
OSA 135 is recommended for students pursuing the Java, PHP, or Multimedia Programmer Tracks

**Website Designer Certificate
Curriculum Code: #1434**

This certificate is designed for the computer user who has strong skills in Microsoft Windows navigation and computer applications packages. Students who are interested in beginning a career in Website Design and who do not possess these prerequisite skills should meet with a coordinator to plan appropriate course selection.

This program prepares students for positions as website designers.

Required Career Courses – 33 credit hours as follows:

Course	Name	Credit Hours
CSC 140	Introduction to Computer Science	
OR MIS 105	Programming Principles	3
MIS 111	Internet Technologies	3
MIS 123	Database Design	3
MIS 141	Website Development: HTML & CSS	3
MIS 241	Advanced Website Development: JavaScript & jQuery	3
MIS 297	Data-Driven Websites	3
OSA 125	Introduction to Website Design	3
OSA 135	Website Applications	3
OSA 232	Introduction to Adobe Creative Suite	3
OSA 234	Adobe Illustrator	3
OSA 236	Adobe Photoshop	<u>3</u>
Total Credit Hours:		33

Multimedia Designer Certificate
Curriculum Code: #1342

This certificate is designed for the experienced computer user who has strong skills in Microsoft Windows navigation and computer applications packages. Students who are interested in beginning a career in Multimedia Design and who do not possess these prerequisite skills should meet with a coordinator to plan appropriate course selections.

This program prepares students for positions as multimedia designers.

Required Career Courses – 24 credit hours as follows:

Course	Name	Credit Hours
MIS 141	Website Development: HTML & CSS	3
MIS 241	Advanced Website Development: JavaScript & jQuery	3
OSA 135	Website Applications	3
OSA 138	Video Editing: Adobe Premiere	3
OSA 232	Introduction to Adobe Creative Suite	3
OSA 234	Adobe Illustrator	3
OSA 236	Adobe Photoshop	3
OSA 238	Advanced Video Editing: Adobe AfterEffects	<u>3</u>
Total Credit Hours:		24

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**E-Commerce Assistant Certificate
Curriculum Code: #1460**

This program prepares students to assist in the development and management of electronic commerce Web sites. E-Commerce has become a major objective of most mid-to large-size companies as well as small companies. E-Commerce includes the knowledge of business principles as well as Web development, database design, and infrastructures. Demand for people with e-commerce skills will continue to grow as businesses continue to expand their use of electronic technology.

Required Career Courses – 36 credit hours as follows:

Course	Name	Credit Hours
	Select six credits from BUS 105, BUS 130, BUS 131, BUS 134, BUS 136 BUS 200, BUS 230, BUS 231	6
IMS101	Introduction to Computer Systems	
OR IMS 115	Microsoft Office I	3
MIS 111	Internet Technologies	3
MIS 123	Database Design	3
MIS 141	Website Development: HTML & CSS	3
MIS 197	E-Commerce Development	3
MIS 210	Project Management	
OR MIS 291	Systems Analysis and Design	3
MIS 292	SQL/Database Applications	3
MIS 297	Data-Driven Websites	3
MIS 298	E-Commerce Policy and Strategy	3
OSA 135	Website Applications	<u>3</u>
Total Credit Hours:		36

Rev.06-22-06

**Software Developer Certificate
Curriculum Code: #1305**

This program prepares students with programming skills that will, when combined with a degree and industry experience, provide the background for entry-level or trainee software development positions. Information technology professionals may also pursue this program to enhance their versatility and career advancement potential.

Within this certificate's courses you will gain hands-on experience using at least two programming languages — selecting from C#, Java, iOS, Android and Visual Basic. Software development lifecycle issues — including solution conception, design, implementation, and testing — are addressed with hands-on experiences using the latest hardware and software development tools. Students expand on their breadth of knowledge by selecting from database, web design/development, eCommerce, and Microsoft Office application integration course options.

Required Career Courses – 15 credit hours as follows:

Course	Name	Credit Hours
CSC 140	Introduction to Computer Science	
<i>OR</i> MIS 105	Programming Principles	3
MIS 123	Database Design	3
MIS 210	Project Management	3
MIS 291	Systems Analysis and Design	3
MIS 292	SQL/Database Applications	3

Choose one track (9 credit hours):

Visual Basic.NET Programmer Track (9 credit hours)		C# Programmer Track (9 credit hours)	
MIS 139 VB .NET Programming I	3	MIS 154 C# Programming I	3
MIS 239 VB .NET Programming II	3	MIS 254 C# Programming II	3
MIS 285 ASP .NET Web Applications	3	MIS 285 ASP .NET Web Applications	3
<i>Or</i> MIS 289 Advanced .NET Development		<i>Or</i> MIS 289 Advanced .NET Development	
Java Programmer Track (9 credit hours)		iOS Programmer Track (9 credit hours)	
MIS 176 Java Programming I	3	CSC 140 Introduction to Computer Science	
MIS 276 Java Programming II	3	<i>Or</i> MIS 154 C# Programming I	
MIS 283 Java Web Applications		<i>Or</i> MIS 160 C++ Programming	
<i>Or</i> MIS 286 Advanced Java Development	3	<i>Or</i> MIS 176 Java Programming I	3
		MIS 124 iOS Programming I	3
		MIS 224 iOS Programming II	3
Android Programmer Track (9 credit hours)			
MIS 176 Java Programming I	3		
MIS 142 Android Programming I	3		
MIS 242 Android Programming II	3		

**Software Developer Certificate (Continued)
Curriculum Code: #1305**
Choose another track (6 credit hours not duplicating selections from the prior track):**

Visual Basic.NET Programming Track (6 credit hours) MIS 139 VB .NET Programming I 3 MIS 239 VB .NET Programming II 3	C# Programming Track (6 credit hours) MIS 154 C# Programming I 3 MIS 254 C# Programming II 3
Java Programming Track (6 credit hours) MIS 176 Java Programming I 3 MIS 276 Java Programming II 3	PHP Programming Track (6 credit hours) MIS 126 PHP Programming I 3 MIS 226 PHP Programming II 3 NOTE: MIS 141 prerequisite required as elective.
iOS Programming Track (6 credit hours) CSC 140 Introduction to Compute Science Or MIS 154 C# Programming I Or MIS 160 C++ Programming Or MIS 176 Java Programming I 3 MIS 124 iOS Programming I 3	Android Programming Track (6 credit hours) MIS 176 Java Programming I 3 MIS 142 Android Programming I 3
RPG Programming Track (6 credit hours) MIS 120 RPG Programming I 3 MIS 220 RPG Programming II 3	Web Client Scripting Track (6 credit hours) MIS 141 Website Development: HTML & CSS 3 MIS 241 Adv. Website Dev.: JavaScript & jQuery 3
E-Commerce Development Track (6 credit hours) MIS 197 E-Commerce Development 3 MIS 297 Data-Driven Websites 3	Web Design Track (6 credit hours) OSA 125 Introduction to Website Design 3 OSA 135 Website Applications 3

Elective Courses (Select 6 Credit Hours that have not been selected above):

CSC 140 Introduction to Computer Science 3	MIS 226 PHP Programming II 3
CSC 240 Advanced Computer Science 3	MIS 239 VB .NET Programming II 3
MIS 120 RPG Programming I 3	MIS 241 Adv. Website. Dev.: JavaScript & jQuery 3
MIS 124 iOS Programming I 3	MIS 242 Android Programming II 3
MIS 126 PHP Programming I 3	MIS 251 ColdFusion Programming 3
MIS 139 VB .NET Programming I 3	MIS 254 C# Programming II 3
MIS 141 Website Development: HTML & CSS 3	MIS 259 Flash ActionScript 3
MIS 142 Android Programming I 3	MIS 276 Java Programming II 3
MIS 154 C# Programming I 3	MIS 283 Java Web Applications 3
MIS 160 C++ Programming 3	MIS 285 ASP .NET Web Applications 3
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MIS 199 Special Short Topics in Technology * 1	MIS 294 Oracle Database Management 3
MIS 200 Special Topics in Technology * 3	MIS 297 Data-Driven Websites 3
MIS 220 RPG Programming II 3	OSA 125 Introduction to Website Design 3
MIS 224 iOS Programming II 3	OSA 135 Website Applications 3

Total Credit Hours: 36

NOTE: A course may not be used more than once when earning a degree/certificate. If you choose tracks that have duplicate courses, you will need to choose (an) additional elective(s) to earn the required number of credit hours.

* NOTE: MIS 199 and MIS 200 can be repeated up to 3 times for credit as long as different topics are selected.

** NOTE: Courses from each track can be pursued simultaneously.

**Programming Skills Certificate
Curriculum Code: #1382**

This certificate program will prepare students with fundamental programming and database skills. It may serve as a foundation for students who plan to pursue careers in technology, an enhancement to studies in other disciplines, or a means for adding technical credentials to one's resume.

Required Career Courses – 9 credit hours as follows:

Course	Name	Credit Hours
CSC 140	Introduction to Computer Science	3
MIS 123	Database Design	3
CSC 240	Advanced Computer Science	<u>3</u>

OR

Course	Name	Credit Hours
MIS 105	Programming Principles	3
MIS 123	Database Design	3
MIS 139	VB .NET Programming I	
OR MIS 154	C# Programming I	
OR MIS 160	C++ Programming	
OR MIS 176	Java Programming I	<u>3</u>

Total Credit Hours: 9

**Visual Basic .NET Programmer Certificate
Curriculum Code: #1457**

This program prepares students with programming skills that will, when combined with a degree, provide the background for entry-level or trainee positions or enhance an information technology professional's versatility and career advancement potential.

Visual Basic is considered to be one of the easiest-to-learn programming languages and it boasts the largest community of software developers worldwide. Visual Basic provides developers with a tool they can use to rapidly deliver desktop, PDA, and data-driven web applications using state-of-the-art object-oriented techniques. Within this certificate's courses you will learn the latest in software design and development methodologies while gaining hands-on experience with the latest versions of Visual Basic.

Required Career Courses – 21 credit hours as follows:

Course	Name	Credit Hours
CSC 140	Introduction to Computer Science	
OR MIS 105	Programming Principles	3
MIS 123	Database Design	3
MIS 139	VB .NET Programming I	3
MIS 239	VB .NET Programming II	3
MIS 285	ASP .NET Web Applications	3
MIS 289	Advanced .NET Development	3
MIS 292	SQL/Database Applications	<u>3</u>
Total Credit Hours:		21

Rev.08-15-15

C# Programmer Certificate
Curriculum Code: #1466

This program prepares students with programming skills that will, when combined with a degree, provide the background for entry-level or trainee positions or enhance an information technology professional's versatility and career advancement potential.

C# bears syntactic similarities to C++ and Java while utilizing a drag-and-drop development environment more commonly found in Visual Basic. The result is a tool that allows for the rapid development of desktop, PDA, data-driven Web applications using state-of-the-art object-oriented techniques. Within this certificate's courses, you will learn the latest in software design and development methodologies while gaining hands-on experience with the latest versions of Visual C#.

Required Career Courses – 21 credit hours as follows:

Course	Name	Credit Hours
CSC 140	Introduction to Computer Science	
OR MIS 105	Programming Principles	3
MIS 123	Database Design	3
MIS 154	C# Programming I	3
MIS 254	C# Programming II	3
MIS 285	ASP .NET Web Applications	3
MIS 289	Advanced .NET Development	3
MIS 292	SQL/Database Applications	<u>3</u>
Total Credit Hours:		21

Rev.08-15-15

Java Programmer Certificate
Curriculum Code: #1458

This program prepares students with programming skills that will, when combined with a degree, provide the background for entry-level or trainee positions or enhance an information technology professional's versatility and career advancement potential.

Because Java was designed for the Internet, it has been a popular choice for writing programs that are platform independent and safe. Java remains popular for network programming and web development. More recently, object-oriented features in the language have made Java a competitive option for writing stand-alone applications. Within this certificate's courses you will learn the latest in software design and development methodologies while gaining hands-on experience with the latest versions of Java.

Required Career Courses – 21 credit hours as follows:

Course	Name	Credit Hours
CSC 140	Introduction to Computer Science	
OR MIS 105	Programming Principles	3
MIS 123	Database Design	3
MIS 176	Java Programming I	3
MIS 276	Java Programming II	3
MIS 283	Java Web Applications	3
MIS 286	Advanced Java Development	3
MIS 292	SQL/Database Applications	<u>3</u>
	Total Credit Hours:	21

Rev.08-15-15

**PHP Programmer Certificate
Curriculum Code: #1344**

This certificate program will prepare students, who otherwise have a degree, with programming skills to design and develop web pages with dynamically generated content and that will provide the background for entry-level or trainee positions or enhance an information technology professional's versatility and career advancement potential.

This program will present students with a wide range of topics with PHP programming including the following: PHP language constructs and usage; procedural model of PHP; web technologies; object model of PHP programming and object-oriented design; access a remote database; migrate a database to another platform; security features; Open Source concepts and topics.

Required Career Courses – 18 credit hours as follows:

Course	Name	Credit Hours
CSC 140	Introduction to Computer Science	
OR MIS 105	Programming Principles	3
MIS 111	Internet Technologies	3
MIS 123	Database Design	3
MIS 126	PHP Programming I	3
MIS 141	Website Development: HTML & CSS	3
MIS 226	PHP Programming II	<u>3</u>
Total Credit Hours:		18

Rev.08-15-15

**iOS Programmer Certificate
Curriculum Code: #1383**

This certificate program will prepare students, who are experienced programmers or software developers or have already completed the *Programming Skills* certificate, with iOS programming skills.

Required Career Courses – 9 credit hours as follows:

Course	Name	Credit Hours
CSC 140	Introduction to Computer Science	
OR MIS 154	C# Programming I	
OR MIS 160	C++ Programming	
OR MIS 176	Java Programming I	3
MIS 124	iOS Programming I	3
MIS 224	iOS Programming II	<u>3</u>
Total Credit Hours:		9

08-15-13

**iOS Developer Certificate
Curriculum Code: #1343**

This certificate program will prepare students, who otherwise have a degree, with iOS programming skills that will provide the background for entry-level or trainee positions or enhance an information technology professional's versatility and career advancement potential.

Within this certificate's courses, students will gain hands-on experience programming for the user interface of iOS, Apple's mobile operating system. This operating system is based on the concept of direct manipulation using multi-touch gestures. Students will also learn how to program for specific interface control elements for this type of operating system.

Required Programming Skills – 6 credit hours as follows:

Course	Name	Credit Hours
CSC 140	Introduction to Computer Science	3
CSC 240	Advanced Computer Science	3

OR

Course	Name	Credit Hours
MIS 105	Programming Principles	3
MIS 154	C# Programming I	
OR MIS 160	C++ Programming	
OR MIS 176	Java Programming I	3

Required Career Courses – 12 credit hours as follows:

Course	Name	Credit Hours
MIS 123	Database Design	3
MIS 124	iOS Programming I	3
MIS 224	iOS Programming II	3
MIS 292	SQL/Database Applications	<u>3</u>

Total Credit Hours: 18

Android Programmer Certificate
Curriculum Code: #1384

This certificate program will prepare students, who are experienced programmers or software developers or have already completed the *Programming Skills* certificate, with Android programming skills.

Required Career Courses – 9 credit hours as follows:

Course	Name	Credit Hours
MIS 176	Java Programming I	3
MIS 142	Android Programming I	3
MIS 242	Android Programming II	<u>3</u>
Total Credit Hours:		9

08-15-13

**Android Developer Certificate
Curriculum Code: #1347**

This certificate program will prepare students, who otherwise have a degree, with Android programming and database skills that will provide the background for entry-level or trainee positions or enhance an information technology professional's versatility and career advancement potential.

Within this certificate's courses, students will gain hands-on experience programming for the user interface of Android, the mobile operating system developed by an alliance led by Google. Students will create applications for these mobile devices using a customized version of Java.

Required Career Courses – 18 credit hours as follows:

Course	Name	Credit Hours
CSC 140	Introduction to Computer Science	
OR MIS 105	Programming Principles	3
MIS 123	Database Design	3
MIS 142	Android Programming I	3
MIS 176	Java Programming I	3
MIS 242	Android Programming II	3
MIS 292	SQL/Database Applications	<u>3</u>
Total Credit Hours:		18

Rev.08-15-13

**Mobile Application Developer Certificate
Curriculum Code: #1385**

This certificate program will prepare students, who otherwise have a degree, with combined mobile programming technology and database skills that will provide the background for entry-level or trainee positions or enhance an information technology professional's versatility and career advancement potential.

Within this certificate's courses, students will gain hands-on experience programming for the user interface of prominent mobile application platforms designed with the Android and iPhone programming languages. Students will create applications for these mobile devices using a version of Java and Objective C customized for development on the Android and iOS platforms.

Required Career Courses – 27 credit hours as follows:

Course	Name	Credit Hours
CSC 140	Introduction to Computer Science	
OR MIS 105	Programming Principles	3
MIS 123	Database Design	3
MIS 124	iOS Programming I	3
MIS 142	Android Programming I	3
CSC 240	Advanced Computer Science	
OR MIS 154	C# Programming I	
OR MIS 160	C++ Programming	3
MIS 176	Java Programming I	3
MIS 224	iOS Programming II	3
MIS 242	Android Programming II	3
MIS 292	SQL/Database Applications	<u>3</u>
Total Credit Hours:		27

08-15-13

**Small Database Administrator Certificate
Curriculum Code: #1380**

This certificate program will prepare students with skills to build and administer a single-user database, including the designing of tables, queries, forms, reports, and macros. Coursework maps to industry certification in personal database management.

Required Career Courses – 6 credit hours as follows:

Course	Name	Credit Hours
IMS 115	Microsoft Office I	3
OSA 257	Microsoft Access	<u>3</u>
Total Credit Hours:		6

08-15-13

Database Administration Skills Certificate
Curriculum Code: #1381

This certificate program will prepare students with foundational skills in database design and administration or enhance an information technology professional's versatility and career advancement potential. Students in this certificate program will gain exposure to a variety of tools, including data modeling software as well as several widely-used database management systems. Course work maps to industry certification in database administration fundamentals.

Required Career Courses – 12 credit hours as follows:

Course	Name	Credit Hours
IMS 115	Microsoft Office I	3
MIS 123	Database Design	3
MIS 292	SQL/Database Applications	3
OSA 257	Microsoft Access	<u>3</u>
Total Credit Hours:		12

08-15-13

Associate Database Administrator Certificate
Curriculum Code: #1345

This certificate program will prepare students, who otherwise have a degree, with database design and management skills that will provide the background for entry-level or trainee positions or enhance an information technology professional's versatility and career advancement potential.

Coursework will emphasize database design principles, Structured Query Language, and database administration using a variety of popular database management systems.

Required Career Courses – 18 credit hours as follows:

Course	Name	Credit Hours
MIS 105	Programming Principles	
OR CSC 140	Introduction to Computer Science	3
MIS 123	Database Design	3
MIS 291	Systems Analysis and Design	3
MIS 292	SQL/Database Applications	3
MIS 294	Oracle Database Management	3
OSA 257	Microsoft Access	<u>3</u>
	Total Credit Hours:	18

08-15-12

**Business Skills Certificate
Curriculum Code: #1423**

This certificate provides students with opportunities to develop the most important basic skills needed in virtually all work places today. Students develop an understanding of business theory, accounting fundamentals, the most common PC applications, and essential Internet skills. Students may complete beginning-level or higher-level coursework in accounting and Internet technologies to qualify for this certificate, depending on requirements in other certificates or degrees they are pursuing.

Required Career Courses – 9 credit hours as follows:

Course	Name	Credit Hours
BUS 100	Introduction to Business	3
BUS 107	Fundamentals of Accounting	2
OR BUS 142	Financial Accounting	4
OR OSA 249	QuickBooks for Office Professionals	3
IMS 115	Microsoft Office I	3
IMS 108	Internet Basics	1
OR MIS 111	Internet Technologies	<u>3</u>
Total Credit Hours:		9 - 13

**Computer Science
A.S. Degree
IAI Recommended Curriculum**

Computer science majors encompass either a business and information systems emphasis or a technical emphasis. The **information systems emphasis** focuses on the use of computer technology and information management methods to solve business problems. This requires knowledge of both computer applications and the basics of business. The **technical emphasis** focuses on algorithms, theoretical foundations of computer science and development of software. A strong foundation in mathematics and science is needed for this emphasis.

These course recommendations are intended for students who are undecided about a transfer school. Students who have selected a transfer school should consult the catalog of that school and an academic advisor for requirements appropriate to the first two years of study. College catalogs and transfer guides for many four year colleges are available in the Academic Advising Center. A pre- or co-requisite may be required for some courses.

Required General Education Core Curriculum Courses—38 credits as follows:
Communication—9 credits

COM 101	Composition I	3
COM 102	Composition II	3
COM 103	Speech Fundamentals	3

Mathematics*—3 credits

MTH 215	Discrete Mathematics	3
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Physical and Life Sciences—8 credits

Choose four credits (1 course) from the following:

BIO 111	General Biology I	4
BIO 112	General Biology II	4
BIO 115	Calculus I/Analytic Geometry	5
BIO 119	Introductory Microbiology	4
BIO 180	Human Anatomy and Physiology I	4
NAT 111	Environmental Science I	4
NAT 112	Environmental Science II	4

Choose four credits (1 course) from the following:
(PHY203 must be chosen for the computer science technical emphasis)

CHM 111	Fundamentals of Chemistry	4
CHM 131	Chemistry (University – Oriented) I	4
EAS 120	Introduction to Earth Science	4
EAS 125	Introduction to Weather and Climate	4
EAS 130	Severe and Hazardous Weather	4
GEL 150	Physical Geology	4

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PHS 101	Physical Science	4
PHS 103	Descriptive Astronomy	4
PHY 106	Fundamentals of Physics	3
And PHY 107	Fundamentals of Physics Lab	1
PHY 110	Mechanical Universe I	3
And PHY 111	Mechanical Universe I Lab	1
PHY 150	Mechanics, Heat and Sound	4
PHY 203	Mechanics	4

Humanities and Fine Arts—9 credits**

Choose three credits (1 course) from Group A, choose three credits (1 course) from Group B, and choose an additional three credits (1 course) from either group:

Group A:

ARB 202	Arabic IV	4
FRE 202	French IV	4
GER 202	German IV	4
HUM 101	Western Humanities I: Foundations	3
HUM 102	Western Humanities I: Continuities	3
HUM 115	World Mythology	3
HUM 120	Women in the Humanities	3
HUM 135	African and Middle Eastern Humanities	3
Or HUM 140	Asian and Oceanic Humanities	3
Or HUM 145	Native American Humanities	3
LIT 213	American Literature I	3
LIT 214	American Literature II	3
LIT 215	Bible as Literature I	3
Or LIT 216	Bible as Literature II	3
LIT 217	Introduction to Poetry	3
LIT 218	Introduction to Drama	3
LIT 219	Women in Literature	3
LIT 220	Introduction to Fiction	3
LIT 221	English Literature I	3
LIT 222	English Literature II	3
LIT 223	Western Literature I	3
LIT 224	Western Literature II	3
LIT 225	Shakespeare	3
LIT 226	Literature of the Non-Western World	3
Or LIT 228	Latin American Literature	3
LIT 227	Literature as Film	3
LIT 230	African American Literature	3
PHI 101	Introduction to Philosophy	3
PHI 111	Critical Thinking	3
PHI 120	World Religions	3
PHI 125	Ethics	3
SPA 202	Spanish IV	4
SPA 213	Introduction to Hispanic Literature	3

Group B:

ART 110	Art Appreciation	3
ART 205	Survey of Art I	3
ART 206	Survey of Art II	3
Or ART 208	Survey of Art III	3
ART 209	Survey of Non-Western Art	3
HUM 101	Western Humanities I: Foundations	3
HUM 102	Western Humanities I: Continuities	3
HUM 120	Women in the Humanities	3
HUM 135	African and Middle Eastern Humanities	3
Or HUM 140	Asian and Oceanic Humanities	3
Or HUM 145	Native American Humanities	3
LIT 227	Literature as Film	3
MUS 106	Introduction to American Music	3
MUS 107	Music Appreciation	3
THE 105	Theater Appreciation	3
THE 107	Film Appreciation	3
THE 110	History of the Theatre	3
THE 111	History of Film	3

Social and Behavioral Sciences—9 credits

ECO 101	Principles of Macroeconomics	3
ECO 102	Principles of Microeconomics	3

 Choose an additional three credits (1 course) from the following:

ANT 201	Introductory Physical Anthropology	3
ANT 202	Introduction to Cultural Anthropology	3
ANT 210	Introduction to Archaeology	3
GEO 101	Cultural Geography	3
GEO 102	World Regional Geography	3
GEO 201	Economic Geography	3
HIS 101	Western Civilization I	3
HIS 102	Western Civilization II	3
HIS 201	American History I	3
HIS 202	American History II	3
HIS 210	History of Asia	3
HIS 215	History of Africa	3
HIS 220	History of Latin America	3
PSC 103	Introduction to Political Science	3
PSC 110	American National Government	3
PSC 115	State and Local Government	3
PSC 210	International Relations	3
PSC 215	Comparative Government	3
PSC 225	Non-Western Comparative Politics	3
PSY101	Introduction to Psychology	3
PSY 104	Life-Span Developmental Psychology	3
PSY 105	Child Psychology	3

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PSY 106	Adolescent Psychology	3
PSY 202	Social Psychology	3
PSY 210	Adult Psychology	3
SOC 101	General Sociology	3
SOC 102	Marriage and Family	3
SOC 204	Sociology of Contemporary Social Problems	3
SOC 210	Minority Groups	3
SOC 215	Sociology of Sex and Gender	3
SSC 101	Social Science I	3

Information Technology and Technical Emphasis (24 additional credits)

Additional Degree Requirement—3 credits

CSC 140	Introduction to Computer Science	3
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Area of Concentration/Major Field—3 credits

CSC 240	Advanced Computer Science	3
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Electives—18 credits

MTH 150 Calculus I is recommended (for Technical Emphasis).

Minimum Total Credit Hours for Degree:

62

* Math requirements vary at four-year institutions

** Foreign Language Requirement: Some universities have a foreign language requirement. Generally, four years of a single foreign language in high school or four semesters of language in college will fulfill this requirement. It is recommended that students complete the entire foreign language sequence at one institution.

**Engineering
A.S. Degree
IAI Recommended Curriculum**

The engineer is concerned with the application of scientific principles to practical problems. There is a wide variety of specialties, but not all types are offered at all baccalaureate schools. A typical four-year curriculum provides a background of chemistry, mathematics and physics during the first two years, with the specialty courses occurring primarily in the last two years. These course recommendations are intended for students who are undecided about a transfer school. Students who have selected a transfer school should consult the catalog of that school and an academic advisor for requirements appropriate to the first two years of study. College catalogs and transfer guides for many four-year colleges are available in the Academic Advising Center.

Required General Education Core Curriculum Courses—40 credits as follows:
Communication—9 credits

COM 101	Composition I	3
COM 102	Composition II	3
COM 103	Speech Fundamentals	3

Mathematics—5 credits

MTH 150	Calculus I/Analytic Geometry	5
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Physical and Life Sciences—8 credits

CHM 131	Chemistry (University – Oriented) I	4
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Choose four credits (1 course) from the following:

BIO 111	General Biology I	4
BIO 112	General Biology II	4
BIO 115	Anatomy and Physiology	4
BIO 119	Introductory Microbiology	4
BIO 180	Human Anatomy and Physiology I	4
NAT 111	Environmental Science I	4
NAT 112	Environmental Science II	4

Humanities and Fine Arts*—9 credits

Choose three credits (1 course) from Group A, choose three credits (1 course) from Group B, and choose an additional three credits (1 course) from either group:

Group A:

ARB 202	Arabic IV	4
FRE 202	French IV	4
GER 202	German IV	4

HUM 101	Western Humanities I: Foundations	3
HUM 102	Western Humanities I: Continuities	3
HUM 115	World Mythology	3
HUM 120	Women in the Humanities	3
HUM 135	African and Middle Eastern Humanities	3
Or HUM 140	Asian and Oceanic Humanities	3
Or HUM 145	Native American Humanities	3
LIT 213	American Literature I	3
LIT 214	American Literature II	3
LIT 215	Bible as Literature I	3
Or LIT 216	Bible as Literature II	3
LIT 217	Introduction to Poetry	3
LIT 218	Introduction to Drama	3
LIT 219	Women in Literature	3
LIT 220	Introduction to Fiction	3
LIT 221	English Literature I	3
LIT 222	English Literature II	3
LIT 223	Western Literature I	3
LIT 224	Western Literature II	3
LIT 225	Shakespeare	3
LIT 226	Literature of the Non-Western World	
Or LIT 228	Latin American Literature	3
LIT 227	Literature as Film	3
LIT 230	African American Literature	3
PHI 101	Introduction to Philosophy	3
PHI 111	Critical Thinking	3
PHI 120	World Religions	3
PHI 125	Ethics	3
SPA 202	Spanish IV	4
SPA 213	Introduction to Hispanic Literature	3

Group B:

ART 110	Art Appreciation	3
ART 205	Survey of Art I	3
ART 206	Survey of Art II	3
Or ART 208	Survey of Art III	3
ART 209	Survey of Non-Western Art	3
HUM101	Western Humanities I: Foundations	3
HUM 102	Western Humanities I: Continuities	3
HUM 120	Women in the Humanities	3
HUM 135	African and Middle Eastern Humanities	3
Or HUM 140	Asian and Oceanic Humanities	3
Or HUM 145	Native American Humanities	3
LIT 227	Literature as Film	3
MUS106	Introduction to American Music	3
MUS 107	Music Appreciation	3
THE105	Theater Appreciation	3
THE 107	Film Appreciation	3
THE 110	History of the Theatre	3
THE 111	History of Film	3

If two courses are selected in one discipline, a two-semester sequence is recommended.

Social and Behavioral Sciences—9 credits

ECO 101	Principles of Macroeconomics	3
ECO 102	Principles of Microeconomics	3

Choose an additional three credits (1 course) from the following:

ANT 201	Introductory Physical Anthropology	3
ANT 202	Introduction to Cultural Anthropology	3
ANT 210	Introduction to Archaeology	3
GEO101	Cultural Geography	3
GEO 102	World Regional Geography	3
GEO 201	Economic Geography	3
HIS 101	Western Civilization I	3
HIS 102	Western Civilization II	3
HIS 201	American History I	3
HIS 202	American History II	3
HIS 210	History of Asia	3
HIS 215	History of Africa	3
HIS 220	History of Latin America	3
PSC 103	Introduction to Political Science	3
PSC 110	American National Government	3
PSC 115	State and Local Government	3
PSC 210	International Relations	3
PSC 215	Comparative Government	3
PSC 225	Non-Western Comparative Politics	3
PSY101	Introduction to Psychology	3
PSY 104	Life-Span Developmental Psychology	3
PSY 105	Child Psychology	3
PSY 106	Adolescent Psychology	3
PSY 202	Social Psychology	3
PSY 210	Adult Psychology	3
SOC 101	General Sociology	3
SOC 102	Marriage and Family	3
SOC 204	Sociology of Contemporary Social Problems	3
SOC 210	Minority Groups	3
SOC 215	Sociology of Sex and Gender	3
SSC 101	Social Science I	3

Additional Degree Requirement—5 credits

MTH 151	Calculus II/Analytic Geometry	5
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Area of Concentration/Major Field—15 credits

MTH 152	Calculus III/Analytic Geometry	4
MTH 201	Differential Equations	3
PHY 203	Mechanics	4
PHY 204	Heat, Electricity and Magnetism	4

Electives

This program does not require any further electives; however, the following additional courses are recommended for each engineering specialty area. Students should complete entire course sequences at the same school. Students should consult the intended transfer school and an academic advisor.

Aeronautical, Civil, General, Industrial, Manufacturing, and Mechanical

EGN 150	Engineering Graphics	3
EGN 201	Engineering Statics	3
EGN 202	Engineering Dynamics	3

Chemical Engineering

CHM 132	Chemistry University Oriented II	5
CHM 203	Organic Chemistry I	5
CHM 204	Organic Chemistry II	5

Computer Engineering

CSC 140	Introduction to Computer Science	3
CSC 240	Advanced Computer Science	3

Electrical Engineering

CSC 140	Introduction to Computer Science	3
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Minimum Total Credit Hours for Degree:
62

* Foreign Language Requirement: Some universities have a foreign language requirement. Generally, four years of a single foreign language in high school or four semesters of language in college will fulfill this requirement. It is recommended that students complete the entire foreign language sequence at one institution.