

COMPUTER INFORMATION TECHNOLOGY
AAS DEGREE

The **Game Animation and Design degree** prepares students to create computer generated animation, design, and create video games, and incorporate the art assets into games. This degree requires a minimum of 68 credits in program requirements and general education in the courses listed below.

Field of Study Code: CIS.AAS.GAMEA

Program Requirements..... 56

Cis 1199	Introduction to Game Industry	3
Cis 1200	Game Design	3
Cis 1201	Advanced Game Design	3
Cis 1211	2D Game Development	3
Cis 1400	Programming Logic and Technique	4
Cis 2211	2D Game Scripting.....	3
Cis 2212	3D Game Development	3
Cis 2213	Advanced 3D Game Development	3
Mptv 1311	Introduction to Animation	3
Mptv 1313	History of Animation	3
Mptv 1320	Experimental Animation	3
Mptv 1324	Motion Graphics and Special Effects I.....	3
Mptv 2331	3-D Animation I	3
Mptv 2333	Motion Graphics and Special Effectives II	3
Mptv 2340	Three-Dimensional Animation II	3
Mptv 2342	Animation Portfolio.....	3
Art 1101	Drawing I	3
Physi 1100	Physics.....	4

General Education 12 to 14
(In addition to the courses listed above.)

Total Credits Required..... 68 to 70

AAS DEGREE

The **Game Design and Development degree** prepares students to design and develop computer games through application of game design elements and development tools used in the game industry. This degree requires a minimum of 64 credits in program requirements, electives and general education in the courses listed below.

Field of Study Code: CIS.AAS.GAMED

Program Requirements..... 41

Cis 1199	Introduction to Game Industry	3
Cis 1200	Game Design	3
Cis 1201	Advanced Game Design	3
Cis 1211	2D Game Development	3

Cis 1400	Programming Logic and Technique.....	4
Cis 2211	2D Game Scripting	3
Cis 2212	3D Game Development.....	3
Cis 2213	Advanced 3D Game Development	3
Cis 2230	Simulation and Serious Game Design	3
Cis 2240	Cross-Platform Game Design	3
Cis 2770	Introduction to System Analysis and Design..	3
Cis 2790	Systems Analyst Simulation	3
Physi 1100	Physics.....	4

Electives 8

Select eight credits from any 1000- or 2000- level courses. (In addition to the courses listed above.)

General Education 15 to 17
(In addition to the courses listed above.)

Total Credits Required..... 64 to 66

AAS DEGREE

The **Game Programming and Development degree** prepares students to create and develop computer games using programming languages and development tools used in the game industry. This degree requires a minimum of 64 credits in program requirements, program electives and general education in the courses listed below.

Field of Study Code: CIS.AAS.GAMEP

Program Requirements..... 47

Cis 1199	Introduction to Game Industry	3
Cis 1200	Game Design	3
Cis 1211	2D Game Development.....	3
Cis 1400	Programming Logic and Technique.....	4
Cis 2211	2D Game Scripting	3
Cis 2212	3D Game Development.....	3
Cis 2213	Advanced 3D Game Development	3
Cis 2220	Game Programming Using C++	3
Cis 2250	Multiplatform Game Programming	3
Cis 2252	Advanced Multiplatform Game Programming	3
Cis 2420	Microprocessor Assembly Language	4
Cis 2541	C++ Language Programming	4
Cis 2542	Advanced C++ with Data Structure Applications	4
Physi 1100	Physics.....	4

Program Electives 3

Select three credits from any 2000- level Cis course. (In addition to the courses listed above.)

General Education 14 to 18
(In addition to the courses listed above.)

Total Credits Required 64 to 68

AAS DEGREE

The **Software Development degree** prepares students to work in the field of computer technology. This degree requires 64 credits in program requirements, program electives, electives and general education in the courses listed below.

Field of Study Code: CIS.AAS.SOFTW

Program Requirements..... 33

Cis	1150	Understanding Computers, Information and Systems	3
Cis	1160	Windows Command Line	2
Cis	1180	Introduction to Networking	3
Cis	1230	Microcomputer Database Application	3
Cis	1310	HTML and CSS	3
Cis	1400	Programming Logic and Technique	4
Cis	1450	Introduction to Linux/Unix Operating Systems	3
Cis	2330	Introduction to XML	3
Cis	2770	Introduction to System Analysis & Design	3
Cis	2790	Systems Analyst Simulation	3
Engli	1105	Workplace Writing	3

Emphasis Courses 16

Choose One of the following Emphases: Software Development: C++, Java, Visual Basic (VB) or .NET.

C++ Emphasis 8

This emphasis focuses on the creation, maintenance, and support of software applications in the C++ environment.

Cis	2541	C++ Language Programming	4
Cis	2542	Advanced C++ with Data Structure Applications.....	4

Java Emphasis 8

This emphasis focuses on the creation, maintenance, and support of software applications in the Java environment.

Cis	2571	Introduction to Java	4
Cis	2572	Collections in Java	4

Visual Basics Emphasis..... 8

This emphasis focuses on the creation, maintenance, and support of software applications in the Visual Basics environment.

Cis	1510	Graphical User Interface Programming.....	4
Cis	2510	Advanced Graphical User Interface	

Programming 4

.NET Emphasis 12

This emphasis focuses on the creation, maintenance, and support of software applications in the .NET environment.

Cis	1510	Graphical User Interface Programming	4
Cis	2350	Introduction to ASP.NET	4
Cis	2561	Introduction to C# .NET	4

Program Electives 4 to 8

Select four to eight additional credits. (In addition to the courses listed above.)

Only for the following emphases: Software Development: C++ Option, Java Option, or VB Option: (8 credits in single programming sequence).

Cis	1510	Graphical User Interface Programming	4
Cis	2510	Advanced Graphic User Interface Programming	4
Cis	2541	C++ Language Programming	4
Cis	2542	Advanced C++ with Data Structure Applications	4
Cis	2571	Introduction to Java	4
Cis	2572	Collections in Java	4

General Education 15 to 17

(In addition to the courses listed above.)

Total Credits Required..... 64 to 66

AAS DEGREE

The Application and Technical Support Specialist degree

prepares students to work in the field of computer technology. This degree requires a minimum of 64 credits in general education, program electives and program requirements in the courses listed below.

Field of Study Code: CIS.AAS.TECH

Program Requirements..... 35

Cis	1150	Understanding Computers, Information and Systems	3
Cis	1160	Windows Command Line	2
Cis	1180	Introduction to Networking	3
Cis	1205	Office Suite Software Integration	3
Cis	1310	HTML and CSS	3
Cis	1400	Programming Logic and Technique.....	4
Cis	1450	Introduction to Linux/Unix Operating Systems	3
Cis	1610	Windows Client OS.....	3
Cis	2770	Introduction to System Analysis and Design..	3
Busin	1111	Customer Service	3
Cit	1100	PC Maintenance and Upgrading	2
Engli	1105	Workplace Writing	3

Program Elective..... 14 to 18
 Select 14 to 18 credits from any Cis courses except Cis 1110.
 (In addition to the courses listed above.)

General Education 15 to 19
 (In addition to the courses listed above.)

Total Credits Required 64 to 72

CERTIFICATE

The **Business Productivity Software certificate** requires 19 credits in the courses listed below.

Field of Study Code: CIS.CER.BUSPRO

Total Credits Required 19

Cis 1130	Windows Basics.....	2
Cis 1150	Understanding Computers, Information and Systems	3
Cis 1205	Office Suite Software Integration.....	3
Cis 1221	Introduction to Spreadsheets	3
Cis 1230	Microcomputer Database Application	3
Cis 1240	Presentation Graphics – Windows Based	2
Cis 1300	Web Design Software.....	3

CERTIFICATE

The **C++ Language Proficiency certificate** requires 15 credits in the courses listed below.

Field of Study Code: CIS.CER.CPLUS

Total Credits Required 15

Cis 1150	Understanding Computers, Information and Systems	3
Cis 1400	Programming Logic and Technique.....	4
Cis 2541	C++ Language Programming	4
Cis 2542	Advanced C++ with Data Structure Applications.....	4

CERTIFICATE

The **Database Proficiency certificate** requires proficiency in using Windows and 10 credits in the courses listed below.

Field of Study Code: CIS.CER.DBPRO

Total Credits Required 10

Cis 1150	Understanding Computers, Information and Systems	3
Cis 1230	Microcomputer Database Application	3
Cis 2710	Database Management.....	4

CERTIFICATE

The **Enterprise Database Proficiency certificate** requires 13 credits in the courses listed below.

Field of Study Code: CIS.CER.ENTDB

Total Credits Required 13

Cis 1400	Programming Logic and Technique.....	4
Cis 2720	Structured Query Language (SQL) I.....	3
Cis 2725	Enterprise SQL Application	3
OR		
Cis 2730	Enterprise Database Development.....	3
Cis 2770	Introduction to System Analysis & Design	3

CERTIFICATE

The **Game Design and Development certificate** will prepare the student for careers in computer game design and development. This certificate requires 31 credits in the courses listed below.

Field of Study Code: CIS.CER.GAMED

Total Credits Required 31

Cis 1199	Introduction to Game Industry	3
Cis 1200	Game Design	3
Cis 1201	Advanced Game Design	3
Cis 1211	2D Game Development.....	3
Cis 1400	Programming Logic and Technique.....	4
Cis 2211	2D Game Scripting	3
Cis 2212	3D Game Development.....	3
Cis 2213	Advanced 3D Game Development.....	3
Cis 2230	Simulation and Serious Game Design	3
Cis 2240	Cross-Platform Game Design	3

CERTIFICATE

The **Game Programming and Development certificate** prepares the student to create and develop computer games using programming languages and development tools used in the game industry. This certificate requires 43 credits in the courses listed below.

Field of Study Code: CIS.CER.GAMEP

Total Credits Required 43

Cis 1199	Introduction to Game Industry	3
Cis 1200	Game Design	3
Cis 1211	2D Game Development.....	3
Cis 1400	Programming Logic and Technique.....	4
Cis 2211	2D Game Scripting	3
Cis 2212	3D Game Development.....	3
Cis 2213	Advanced 3D Game Development.....	3
Cis 2220	Game Programming Using C++	3

Cis	2250	Multiplatform Game Programming.....	3
Cis	2252	Advanced Multiplatform Game Programming.....	3
Cis	2420	Microprocessor Assembly Language.....	4
Cis	2541	C++ Language Programming	4
Cis	2542	Advanced C++ With Data Structure Applications.....	4

CERTIFICATE

The **iPhone/iPad Developer Proficiency certificate** prepares the student to design and develop applications for Apple iOS platform in accordance with Apple development standards. This certificate requires 16 credits in the courses listed below.

Field of Study Code: CIS.CER.IPHPD

Total Credits Required				16
Cis	1400	Programming Logic and Technique.....	4	
Cis	2541	C++ Language Programming	4	
Cis	2592	iPhone/iPad Application Development.....	4	
Cis	2594	Advanced iPhone/iPad Application Development.....	4	

CERTIFICATE

The **JAVA Language Proficiency certificate** requires 15 credits in the courses listed below.

Field of Study Code: CIS.CER.JAVA

Total Credits Required				15
Cis	1150	Understanding Computers, Information and Systems	3	
Cis	1400	Programming Logic and Technique.....	4	
Cis	2571	Introduction to Java	4	
Cis	2572	Collections in Java	4	

CERTIFICATE

The **LINUX certificate** documents proficiency in the Linux operating system and its environment. This certificate requires 16 credits in the courses listed below.

Field of Study Code: CIS.CER.LINUX

Total Credits Required				16
Cis	1150	Introduction to Computer Information Systems	3	
Cis	1400	Programming Logic and Technique.....	4	
Cis	1450	Introduction to Linux/Unix Operating Systems	3	
Cis	2440	Shell Programming for UNIX/LINUX.....	3	
Cis	2455	LINUX System Administration	3	

CERTIFICATE

The **Windows Network Administration certificate** for Information Technology (IT) professionals with the knowledge to design and implement a Microsoft network using Active Directory (AD). This certificate requires 21 credits in the courses listed below.

Field of Study Code: CIS.CER.NETWK

Total Credits Required				21
Cis	1150	Understanding Computers, Information and Systems	3	
Cis	1180	Introduction to Networking	3	
Cis	1610	Windows Client OS.....	3	
Cis	1620	Windows Server OS.....	3	
Cis	1630	Windows Server Active Directory (AD)	3	
Cis	1660	Managing a Microsoft Windows Server Network	3	
Cis	1670	Planning a Microsoft Windows Server Network	3	

CERTIFICATE

The **Spreadsheet Proficiency certificate** requires 18 credits in the courses listed below.

Field of Study Code: CIS.CER.SPREAD

Total Credits Required				18
Cis	1130	Windows Basics	2	
Cis	1150	Understanding Computers, Information and Systems	3	
Cis	1205	Office Suite Software Integration	3	
Cis	1221	Introduction to Spreadsheets	3	
Cis	1222	Advanced Spreadsheets.....	3	
Cis	1400	Programming Logic and Technique.....	4	

CERTIFICATE

The **UNIX Proficiency certificate** requires 16 credits in the courses listed below.

Field of Study Code: CIS.CER.UNIX

Total Credits Required				16
Cis	1150	Introduction to Computer Information Systems	3	
Cis	1400	Programming Logic and Technique.....	4	
Cis	1450	Introduction to Linux/Unix Operating Systems	3	
Cis	2440	Shell Programming for UNIX/LINUX.....	3	
Cis	2450	UNIX System Administration.....	3	

CERTIFICATE

The **Visual BASIC Language Proficiency certificate** requires 15 credits in the courses listed below.

Field of Study Code: CIS.CER.VB

Total Credits Required 15

Cis	1150	Understanding Computers, Information and Systems	3
Cis	1400	Programming Logic and Technique	4
Cis	1510	Graphical User Interface Programming.....	4
Cis	2510	Advanced Graphical User Interface Programming.....	4

CERTIFICATE

The **Web Programmer certificate** requires 31 credits in the courses listed below.

Field of Study Code: CIS.CER.WEBPRG

Total Credits Required 31

Cis	1120	The Internet	2
Cis	1130	Windows Basics.....	2
Cis	1150	Understanding Computers, Information and Systems	3
Cis	1180	Introduction to Networking	3
Cis	1300	Web Design Software.....	3
Cis	1310	HTML and CSS	3
Cis	1400	Programming Logic and Technique	4
Cis	2320	JavaScript and Advanced HTML	3
Cis	2571	Introduction to Java	4
Cis	2572	Collections in Java	4

CERTIFICATE

The **Web Client Developer certificate** provides the necessary skills and knowledge for client-side Web site development. Learn to develop Web sites using Hypertext Markup Language version 5 (HTML5), Cascading Style Sheets (CSS), and JavaScript. You will write code manually, as well as use graphical user interface (GUI) authoring tools, and program client-side, platform-independent solutions. This certificate requires 13 credits in the courses listed below.

Field of Study Code: CIS.CER.CLIENT

Total Credits Required 13

Cis	1300	Web Design Software.....	3
Cis	1310	HTML and CSS	3
Cis	1400	Programming Logic and Technique.....	4
Cis	2320	JavaScript and Advanced HTML	3