

COMPUTER INFORMATION SYSTEMS
AAS DEGREE

The **Game Animation and Design degree** prepares students to create animations, design and develop video games, and incorporate art assets using game industry tools.

Field of Study Code: CIS.AAS.GAMEA

Program Requirements	58
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 1212 Game Asset Creation and File Optimization ..3	
Cis 1400 Programming Logic and Technique.....	4
Cis 2212 3D Game Development.....	3
Cis 2332 Game Animation	3
OR	
Mptv 2332 Game Animation	3
Cis 2290 Game Development Capstone Project	4
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
Art 1101 Drawing I	3
Physi 1100 Physics.....	4
Engli 1101 English Composition I	3
OR	
Engli 1105 Workplace Writing	3
Spec 1100 Fundamentals of Speech Communication	3
OR	
Spec 1120 Small Group Communication	3
OR	
Spec 1150 Introduction to Business Communication	3

General Education6
Select one course from each category: Social and Behavioral Sciences, Mathematics (1000 level or above)

Total Credits Required.....64

AAS DEGREE

The **Game Design and Development degree** prepares students to design and develop video games through application of game design elements and development tools used in the game industry.

Field of Study Code: CIS.AAS.GAMED

Program Requirements	50
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 1212 Game Asset Creation and File Optimization ..3	
Cis 1400 Programming Logic and Technique.....	4
Cis 2211 2D Game Scripting	3
Cis 2212 3D Game Development.....	3
Cis 2541 C++ Language Programming	4
Cis 2770 Introduction to System Analysis and Design..	3
Cis 2290 Game Development Capstone Project	4
Physi 1100 Physics.....	4
Art 1101 Drawing I	3
Engli 1101 English Composition I	3
OR	
Engli 1105 Workplace Writing	3
Spec 1100 Fundamentals of Speech Communication	3
OR	
Spec 1120 Small Group Communication	3
OR	
Spec 1150 Introduction to Business Communication	3

Electives8
Select eight credits from any 1000- or 2000- level courses. (In addition to the courses listed above.)

General Education6
Select one course from each category: Social and Behavioral Sciences, Mathematics (1000 level or above)

Total Credits Required.....64

AAS DEGREE

The **Game Programming and Development degree** prepares students to develop video games using programming languages and development tools used in the game industry.

Field of Study Code: CIS.AAS.GAMEP

Program Requirements	58-60
Cis 1199 Introduction to Game Industry	3
Cis 1200 Game Design	3
Cis 1211 2D Game Development.....	3
Cis 1212 Game Asset Creation and File Optimization ..3	
Cis 1400 Programming Logic and Technique.....	4
Cis 2211 2D Game Scripting	3
Cis 2212 3D Game Development.....	3
Cis 2220 Game Programming Using C++	3
Cis 2420 Microprocessor Assembly Language	4
Cis 2541 C++ Language Programming	4
Cis 2542 Advanced C++ with Data Structure	

	Applications.....	4
Cis 2770	Introduction to System Analysis and Design	3
Cis 2290	Game Development Capstone Project	4
Physi 1100	Physics	4
Math 1115	Technical Mathematics I	3
	OR	
Math 1428	College Algebra with Applications	3
	OR	
Math 1431	Precalculus I	5
	OR	
Math 1432	Precalculus II: Trigonometry	3
Engli 1101	English Composition I	3
	OR	
Engli 1105	Workplace Writing	3
Speec 1100	Fundamentals of Speech Communication	3
	OR	
Speec 1120	Small Group Communication	3
	OR	
Speec 1150	Introduction to Business Communication	3

General Education6

Select one course from each category: Social and Behavioral Sciences, Humanities and Fine Arts

Total Credits Required..... 64 to 66

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 Courses16

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

C++ Emphasis8

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 Emphasis8

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 Emphasis12

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 Electives4 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 provide help, support, and technical advice to computer users.

Field of Study Code: CIS.AAS.TECH

Program Requirements.....36

Cis	1150	Understanding Computers, Information and Systems	3
Cis	1160	Windows Command Line	3
Cis	1180	Introduction to Networking	3
OR			
Cis	1116	Network Essentials	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 Electives13

Select 13 credits from any CIS courses except CIS 1110. (In addition to the courses listed above.)

General Education15

(In addition to the courses listed above.)

Total Credits Required.....64

CERTIFICATE

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

Field of Study Code: CIS.CER.BUSPRO

Total Credits Required19

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 Required15

Cis	1150	Understanding Computers, Information	
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		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 Required10

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 Required13

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 video game design and development.

Field of Study Code: CIS.CER.GAMED

Total Credits Required32

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	1212	Game Asset Creation and File Optimization ..	3
Cis	1400	Programming Logic and Technique.....	4
Cis	2211	2D Game Scripting	3
Cis	2212	3D Game Development.....	3
Cis	2541	C++ Language Programming	4
Art	1101	Drawing I	3

CERTIFICATE

The **Game Programming and Development certificate** prepares the student to program and develop video games using programming languages and development tools used in the game industry.

Field of Study Code: CIS.CER.GAMEP

Total Credits Required	34
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 2220 Game Programming Using C++	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

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

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