

# INFORMATION TECHNOLOGY A.A.S. – GAMING DESIGN AND PROGRAMMING OPTION

60 semester hours required to graduate

This degree gives students substantial knowledge of techniques required for software programming fundamentals. The primary emphasis of the curriculum is hands-on training enabling students to enter the programming field with skills to support jobs with advanced C++ programming, graphic design, and artificial intelligence demands. Students will use these skills to obtain jobs and to advance to better positions in their current jobs at some of the top companies. Students who successfully complete the following courses can be awarded this degree.

Students must adhere to prerequisite courses as described in the course descriptions in this catalog.

## First Semester

BCIS	1305	Business Computer Applications .....	3
GAME	1294	Special Topics (Second Life) .....	2
GAME	1303	Introduction to Game Design & Development .....	3
GAME	1336	Introduction to 3-D Game Modeling.....	3
ITSE	1329	Programming Logic and Design .....	3
			<b>TOTAL 14</b>

## Second Semester

GAME	1302	Interactive Storyboarding.....	3
GAME	1304	Level Design.....	3
GAME	2308	Portfolio of Game Development .....	3
ITSE	1302	Computer Programming .....	3
ITSE	2317	Java Programming .....	3
			<b>TOTAL 15</b>

## Third Semester

GAME	1309	Introduction to Animation Programming .....	3
ITSE	1307	Introduction to C++ Programming .....	3
ITSE	1359	Introduction to Scripting Languages.....	3
ENGL	1301	Composition I.....	3
MATH	1332	Contemporary Math or Higher .....	3
			<b>TOTAL 15</b>

## Fourth Semester

ARTC	2313	Digital Publishing II OR	
ITSC	1391	Special Topics in Computer & Information Sciences (App Development).....	3
ITSE	2331	Advanced C++ Programming .....	3
Elective	X3XX	Language, Philosophy & Culture OR Creative Arts .....	3
Elective	X3XX	Social/Behavioral Science .....	3
SPCH	X3XX	SPCH 1311 or SPCH1315.....	3
POFT	1120	Job Search Skills.....	1
			<b>TOTAL 16</b>

CURRICULA

### **ARTC 2313 – Digital Publishing II (50.0409) 3 semester hours (2-4-0)**

Includes layout procedures from thumbnails and roughs to final comprehensive and print layout. Emphasis on design principles for the creation of advertising and publishing materials, and techniques for efficient planning and documenting projects. Two hours lecture and four hours lab per week.

## **ARTS/ART & DESIGN**

### **ARTS 1301 – Art Appreciation (50.0703.51 26) 3 semester hours (3-0-0)**

Exploration of purposes and processes in the visual arts including evaluation of selected works. Three hours lecture per week.

### **ARTS 1303 – Art History Survey I (50.0703.52 26) 3 semester hours (3-0-0)**

A survey of painting, sculpture, and other visual arts from prehistoric times to the 14th century. Three hours lecture per week.

### **ARTS 1304 – Art History Survey II (50.0703.52 26) 3 semester hours (3-0-0)**

A survey of painting, sculpture, architecture, and other visual arts from the 14th century to the present. Three hours lecture per week.

### **ARTS 1311 – Design I (50.0401.53 26) 3 semester hours (3-3-0)**

A basic course in the study and application of the elements and principles of design and color theory. Studio work involves the use of a wide range of media in solving problems dealing with value, line, space, texture, color and shape in two-dimensional design. Three hours lecture and three hours lab per week.

### **ARTS 1312 – Design II (50.0401.53 26) 3 semester hours (3-3-0)**

A study and application of the principles of creative processes using three-dimensional design. Three hours lecture and three hours lab per week.

### **ARTS 1316 – Drawing I (50.0705.52 26) 3 semester hours (3-3-0)**

A beginning course investigating a variety of media, techniques, and subjects, exploring perceptual and descriptive possibilities with consideration of drawing as a developmental process as well as an end in itself. Three hours lecture and three hours lab per week.

### **ARTS 1317 – Drawing II (50.0705.52 26) 3 semester hours (3-3-0)**

Expansion of Drawing I exploring a variety of drawing media and stressing expressive aspects of drawing. Prerequisite: ARTS 1316. Three hours lecture and three hours lab per week.

### **ARTS 2316 – Painting I (50.0708.52 26) 3 semester hours (3-3-0)**

An introductory course in the study and practice of painting. Emphasis on color and composition. Three hours lecture and three hours lab per week.

### **ARTS 2317 – Painting II (50.0708.52 26) 3 semester hours (3-3-0)**

Continuation of Painting I with emphasis on individual expression. Prerequisite: ARTS 2316. Three hours lecture and three hours lab per week.

## **ASTRONOMY**

(See PHYS/Physics)

## **BCIS/BUSINESS COMPUTER APPLICATIONS**

**BCIS 1305 - Business Computer Applications** (11.0202.54 04) 3 semester hours (2-4-0)

Students will study computer terminology, hardware, and software related to the business environment. The focus of this course is on business productivity software applications and professional behavior in computing, including word processing (as needed), spreadsheets, databases, presentation graphics, and business-oriented utilization of the Internet. This course is recommended for business, mathematics, and computer science majors. Prerequisite: None. Two hours lecture and four hours lab per week.

## **BIOL/BIOLOGY**

**BIOL 1322 – Nutrition & Diet Therapy I** (19.0501.51 09) 3 semester hours (3-0-0)

A survey of the science of human nutrition, including an in-depth study of nutrients and the roles they play in the body for maintenance, growth and health. Three hours lecture per week.

**BIOL 1406 – Principles of Biology I (for Majors)** (26.0101.51 03) 4 semester hours (3-3-0)

An introduction to the physical and chemical organization of living organisms, cell structure, function, and metabolism. Students learn to understand and interpret terms and discover principles covering all aspects of living organisms. Concepts of reproduction, genetics, ecology, and the scientific method are included. Intended for science majors and pre-health professionals. Three hours lecture and three hours lab per week.

**BIOL 1407 – Principles of Biology II (for Majors)** (26.0101.51 03) 4 semester hours (3-3-0)

An introduction to plant and animal growth, plant and animal tissues and systems, ecology, evolution and behavior. Concepts of reproduction, genetics, ecology, and the scientific method are included. Intended for science majors and pre-health professionals. Three hours lecture and three hours lab per week.

**BIOL 1408 – General Biology I (Non-majors)** (26.0101.51 03) 4 semester hours (3-3-0)

An introduction to the nature of science, the fundamental principles of living organisms including characteristics of life, the molecular and cellular basis of life, genetics, reproduction, and evolution, for non-science majors. An emphasis will be placed on how these topics are related to current issues and problems facing modern society. Prerequisite: None. Three hours lecture and three hours laboratory per week.

**BIOL 1409 – General Biology II (Non-majors)** (26.0101.51 03) 4 semester hours (3-3-0) An introduction to the nature of science, the fundamental principles of living organisms including characteristics of ecology, plant and animal diversity, and physiology for non-science majors. An emphasis will be placed on how these topics are related to current issues and problems facing modern society. Prerequisite: None. Three hours lecture and three hours laboratory per week.

**BIOL 1411 – General Botany** (26.0301.51 03) 4 semester hours (3-3-0)

Study of structure and function of plant cells, tissues, and organs. Includes an evolutionary survey and life histories of the following representative groups: algae, fungi, mosses, liverworts, ferns, and seed producing organisms. Plant reproductive and functional interactions with their environment and with humans. Selected lab exercises. Three hours lecture and three hours lab per week.

interpretation of French culture. Three hours lecture per week. Must be taken in sequence.

## **GAME/ANIMATION, INTERACTIVE TECHNOLOGY, VIDEO**

### **GRAPHICS AND SPECIAL EFFECTS**

**GAME 1294 - Special Topics in Animation, Interactive Technology, Video Graphics and Special Effects** (10.0304) 2 semester hours (1-4-0)

Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. This course will cover the uses of a virtual world in the student's personal and professional life. One hour lecture and four hours lab per week.

**GAME 1302 - Interactive Storyboarding** (10.0304) 3 semester hours (2-4-0)

In-depth coverage of storyboarding for the development of interactive media. Addresses target audience analysis, purpose, goals and objectives, content outline, flow chart, and interactive storyboarding. Prerequisite: Keyboarding proficiency. Two hours lecture and four hours lab per week.

**GAME 1303 - Introduction to Game Design and Development** (10.0304) 3 semester hours (2-4-0)

Introduction to electronic game development and game development careers. Includes examination of history and philosophy of games, the game production process, employee factors for success in the field, and current issues and practices in the game development industry. Prerequisite: Keyboarding proficiency. Two hours lecture and four hours lab per week.

**GAME 1304 - Level Design** (10.0304) 3 semester hours (2-4-0).

Introduction to the tools and concepts used to create levels for games and simulations. Incorporates level design, architecture theory, concepts of critical path and flow, balancing, play testing, and storytelling. Includes utilization of toolsets from industry titles. Prerequisite: Keyboarding proficiency. Two hours lecture and four hours lab per week.

**GAME 1309 - Introduction to Animation Programming** (10.0304) 3 semester hours (2-4-0)

Mathematical elements and algorithms involved in basic animation. Includes generating graphics, viewing 3D environments such as visible line detection and 3D surfaces, image processing techniques, and special effects. Two hours lecture and four hours lab per week.

**GAME 1336 – Introduction to 3-D Game Modeling** (10.0304) 3 semester hours (2-4-0)

Introduction to 3D game modeling using Architectural spaces and modeling in a real-time game editor. Prerequisite: Keyboarding proficiency. Two hours lecture and four hours lab per week.

**GAME 2308 - Portfolio for Game Development** (10.0304) 3 semester hours (2-4-0)

Design and management of an industry standard portfolio. Includes techniques in self-promotion, resume writing, portfolio distribution systems, and interviewing. Prerequisite: Keyboarding proficiency. Two hours lecture and four hours lab per week.

**ITNW 1316 –Network Administration** (11.0901) 3 semester hours (2-4-0)

An introduction to network administration. Prerequisites: ITNW 1325. Two hours lecture and four hours lab per week.

**ITNW 1325 – Fundamentals of Networking Technologies** (11.1002) 3 semester hours (2-4-0)

Instruction in networking technologies and their implementation. Topics include the OSI reference model, network protocols, transmission media, and networking hardware and software. Corequisites: CPMT 1351 and keyboarding proficiency. Two hours lecture and four hours lab per week.

**ITNW 2188 – Computer Network Internship** (11.0901) 2 semester hours (0-0-48)

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Student is required to obtain appropriate paid or unpaid employment. The student must have at least 3 work hours per week.

**ITSC/COMPUTER & INFORMATION SCIENCES****ITSC 1391 – Special Topics in Computer and Information Sciences, General (App Development)** (11.0101) 3 semester hours (2-4-0)

Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Prerequisites: Will vary depending on the topics covered. Two hour lecture and four hours lab per week.

**ITSC 2286 – Internship, Computer and Information Sciences, General** (11.0101) 2 semester hour (0-0-6)

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisites: Completion of two core courses in a related program. Six hours work per week. Student is required to obtain appropriate paid or unpaid employment.

**ITSC 2321 – Integrated Software Applications II** (11.0101) 3 semester hours (2-4-0)

Intermediate study of computer applications from business productivity software suites. Instruction in embedding data and linking and combining documents using word processing, spreadsheets, databases, and/or presentation media software. Three hours lecture and three hours lab per week.

**ITSE/COMPUTER PROGRAMMING/ PROGRAMMER, GENERAL****ITSE 1302 – Computer Programming** (11.0201) 3 semester hours (2-4-0)

Introduction to computer programming including design, development, testing, implementation, and documentation. Prerequisites: ITSE 1329. Keyboarding proficiency required. Two hours lecture and four hours lab per week.

**ITSE 1307 – Introduction to C++ Programming** (11.0201) 3 semester hours (2-4-0)

Introduction to computer programming using C++. Emphasis on the fundamentals of object-oriented design with development, testing, implementation, and documentation. Includes language syntax, data and file structures, input/output devices, and files. Prerequisites: ITSE 1302 or consent of department chair or faculty. Keyboarding proficiency required. Two hours lecture and four hours lab per week.

**ITSE 1329 – Programming Logic and Design** (11.0201) 3 semester hours (3-0-0)  
Formerly COSC 1309

Problem-solving applying structured techniques and representation of algorithms using design tools. Includes testing, evaluation, and documentation. Three hours lecture per week.

**ITSE 1359 – Introduction to Scripting Languages** (11.0201) 3 semester hours (2-4-0)

Introduction to scripting languages including basic data types, control structures, regular expressions, input/output, and textual analysis. Prerequisites: ITSE 1329. Keyboarding proficiency required. Two hours lecture and four hours lab per week.

**ITSE 2286 – Internship, Computer Programming/Programmer** (11.0201) 2 semester hours (0-0-6)

A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisites: Completion of two core courses in a related program. Six hours work per week. Student is required to obtain appropriate paid or unpaid employment.

**ITSE 2317 – JAVA Programming** (11.0201) 3 semester hours (2-4-0)

Introduction to object-oriented Java programming including the fundamental syntax and semantics. Prerequisites: ITSE 1329 or consent of department chair or faculty. Keyboarding proficiency required. Two hours lecture and four hours lab per week.

**ITSE 2331 – Advanced C++ Programming** (11.0201) 3 semester hours (2-4-0)

C++ programming techniques including file access, abstract data structures, class inheritance, and other advanced techniques. Prerequisites: ITSE 1307. Keyboarding proficiency required. Two hours lecture and four hours lab per week.