

Indiana Commission for Higher Education
Indiana Board for Proprietary Education

Out-of-State Institutions and
In-State Proprietary Institutions Offering Instruction in Indiana
with a Physical Presence in the State

DEGREE APPLICATION
(New or Renewal program)

Use the <tab> key to advance to the next field, or select a field by clicking the cursor.

Name of Institution **The Art Institute of Indianapolis**

Name of Program **Software Development for Creative Technologies**

Level of Degree (AAS, AS, AA, BAS, BA, BS, MBA, MAS, MA, MS, Ph.D.) **BS**

Name of Person Preparing this Form **Michele Zollner**

Telephone Number **412-995-1879** **Application Type**

Date the Form was Prepared **February 27, 2015** Initial
(Revise date after any revision) Revised on 5/20/2015

I. PROGRAM OBJECTIVES: Describe what the program is designed to achieve and explain how it is structured in order to accomplish the objectives.

Program Description

The Bachelor Degree Program in Software Development for Creative Technologies is an eleven-quarter, 180-credit, program designed to educate students in skills necessary to create, modify, and test programming codes and scripts utilized in the functional operation of computer systems and applications as well as the implementation of these codes in the design and development of various software solutions. Specific emphasis will be applied to programming and development skills for creative media, technologies, and software.

The Software Development for Creative Technologies degree program emphasizes hands-on learning and utilizes industry-related technology and software. Course topics in the Software Development for Creative Technologies degree program include software design, user interface design, mobile device programming, computer networking, artificial intelligence, design patterns and data structures, e-commerce and operating and file systems.

The Software Development for Creative Technologies program at The Art Institutes is the first step toward a career in the creative development of unique software and programming solutions. Initially, students develop an understanding of numerous programming languages and their uses. As they progress through the program, students learn to apply programming and development abilities to various multimedia projects and learn about the uses of various software solutions for different creative industry goals. Throughout the Software Development for Creative Technologies program students gain an understanding of the of the scope of the software development process, including planning, design and development, programming and testing,

and maintenance and develop strong knowledge of math and physics skills required to program code and algorithms for multimedia and digital design programming.

With a Software Development for Creative Technologies degree, graduates can pursue entry-level jobs such as Applications Programmer, AV Designer/Programmer, Systems Programmer/Analyst, Developer-Programmer, Computer Programmer, JAVA Developer, Software Developer, Embedded Software Developer, Tools Programmer, Graphics Software Engineer, Animation Programmer, C/C++ Programmer and Graphics & Engine Programmer.

Program Mission

The mission of the Software Development for Creative Technologies degree program is to provide a focus on the development of unique software and programming solutions utilizing creative thinking skills. Graduates are prepared to grow their careers from entry-level positions in the software development field through practice of lifelong learning. Software Development for Creative Technologies graduates are prepared to meet the challenges of the continually changing marketplace and profession.

Program Objectives

In the Bachelor Degree Software Development for Creative Technologies students will:

- Learn the use of one or more common programming languages (C++, C#, Java, etc.)
- Gain an understanding of numerous additional programming languages (Python, PHP, SQL, etc.) and their uses
- Learn to apply programming and development abilities to various multimedia projects
- Understand the software development process, including planning, design and development, programming and testing, and maintenance
- Learn about the uses of various software solutions for different creative industry goals and will understand how to implement them appropriately
- Develop strong knowledge of math and physics skills required to program code and algorithms required for multimedia and digital design programming
- Learn to utilize creative thinking skills in development of unique software and programming solutions

II. PROGRAM STRUCTURE: List all courses in the program. Indicate course name, course number, and number of credit hours or clock hours for each course.

Name of Program: _____ **BS in Software Development for Creative Technologies** _____

Total Course Hours: 180 Check one: Quarter Hours X
 _____ Semester Hours _____
 _____ Clock Hours _____

Tuition : \$73,620 Length of Program: 121 weeks

SPECIALTY COURSES:

<u>Course Number</u>	<u>Course Title</u>	<u>Course Hours</u>
GWDA123	Programming Logic	3
GWDA133	Fundamentals of Web Design	3
GWDA243	Object-Oriented Scripting	3
GWDA273	Intermediate Web Design	3
GWDA283	Advanced Web Design	3
MAAA213	3D Modeling	3
MAAA232	3D Animation	3
SDVA101	Survey of Software Development	3
SDVA102	Design for Programmers	3
SDVA103	C++ Programming I	3
SDVA202	Software Design & User Interface I	3
SDVA203	C++ Programming II	3
SDVA212	Software Design & User Interface II	3
SDVA213	C++ Programming III	3
SDVA223	Databases I	3
SDVA233	Databases II	3
SDVA243	Secondary Languages I	3
SDVA303	Team Management & Software Lifecycle	3
SDVA306	Team Production I	3

SDVA313	Mobile Device Programming I	3
SDVA316	Team Production II	3
SDVA323	Computer Networking I	3
SDVA333	Secondary Languages II	3
SDVA343	Mobile Device Programming II	3
SDVA353	Computer Networking II	3
SDVA363	E-Commerce	3
SDVA373	Software Instrumentation & Analysis	3
SDVA383	Alternative Languages I	3
SDVA393	Operating Systems & File Systems Programming	3
SDVA403	Game Engine Scripting	3
SDVA406	Internship	3
OR	OR	
Elective I	Elective I	
SDVA409	Portfolio I	3
SDVA413	Alternative Languages II	3
SDVA419	Portfolio II	3
SDVA423	Artificial Intelligence	3
VGPA107	Discrete Mathematics	3
VGPA117	Geometry for Computer Graphics	3
VGPA203	Design Patterns & Data Structures	3
VGPA207	Continuous Mathematics for Applications	3
	Elective II	3
	Elective III	3
	Elective IV	3

GENERAL EDUCATION / LIBERAL ARTS COURSES:

<u>Course Number</u>	<u>Course Title</u>	<u>Course Hours</u>
GE110	English Composition	4
GE115	Critical Thinking	4

GE120	College Mathematics	4
GE130	Art History	4
GE140	Speech and Communication	4
GE150	Natural Science	4
GE160	Psychology	4
GE200	Sociology	4
GE201	Historical and Political Issues	4
GE220	World Civilization	4
GE250	Anthropology	4
GE260	Research and Technical Writing	4
GE280	Conversational Spanish I	4
GE490	General Education Capstone	2

Number of Credit/Clock Hrs. in Specialty Courses: 126 / 180 Percentage: 70%

Number of Credit/Clock Hrs. in General Courses: _____ / _____ Percentage: _____

If applicable:

Number of Credit/Clock Hrs. in Liberal Arts: 54 / 180 Percentage: 30%

III. LIBRARY: Please provide information pertaining to the library located in your institution.

1. Location of library; Hours of student access; Part-time, full-time librarian/staff:

Location of Library: Second floor of Pyramid Two, 219

Hours of student access:

On campus:

Monday – Friday 7:30am – 8:00pm

Ask Today On-Call Librarian Service:

Monday – Thursday: 8am – 2am ET

Friday: 8am – 11pm ET

Saturday: 10am – 11pm ET

Sunday: 12pm – 2am ET

Full-time staff: One MLS

Part-time staff: Four student workers

Ask Today On-Call staff: Five FT and one PT MLS

2. Number of volumes of professional material:

At the campus: 6,947

Online: 198,907

3. Number of professional periodicals subscribed to:

At the campus: 71

Online: over 20,000

4. Other library facilities in close geographical proximity for student access:

Indianapolis Public Library, Indianapolis Museum of Art Library, Indiana University/Perdue University Indianapolis

IV. FACULTY: Attach completed Instructor's Qualification Record for each instructor.
**** Include all required documentation pertaining to the qualifications of each instructor.**

Total # of Faculty in the Program:	23	Full-time:	3	Part-time:	20
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Fill out form below: (PLEASE LIST NAMES IN ALPHABETICAL ORDER.)

List Faculty Names (Alphabetical Order)	Degree or Diploma Earned	# Years of Working Experience in Specialty	# Years Teaching at Your School	# Years Teaching at Other	Check one:	
					Full-time	Part-time
Brittany Burtner	BS	2	.75	0		X
Heather Bussell	BS	13	3.5	0		X
Colin Cassidy	BA	7	2	0		X
Scott Chenoweth	BS	11	6	0		X
Josh Corken	BS	5	1	0		X
Kristine Costello	BA	6	5	1		X
Gregory Craddock	MEd	10	4.5	17		X
Christopher Howden	BS	2	1	0		X
John King	MS	12	5	3		X
Brian Lee	BS	8	2	0		X
Karen Lee	BS	13	3.5	6		X
Brenda Manley	BS	23	.5	0		X
Heather Miles	BS	9	3.5	9		X
Rick Morris	MS	4	.5	2		X
Chris Pickey	BS	11	2.5	0		X
Austin Pittman	MFA	9	3.5	4		X
Gregory Rowe	MFA	12	3	0		X
Josette Starks-Van	MS	8	.25	15	X	
Elizabeth Staver	MFA	8	5.5	1	X	
Roxanne Terhune	MFA	31	.5	0		X
Ed Ventura	MS	10	.5	2		X

Matt Wagner	BS	3	1	0		X
Steve Williams	BA	14	5.5	0	X	

**Supplementary Information on
Licensure, Certification, and Accreditation**

Institution: The Art Institute of Indianapolis
Degree Program: Bachelor of Science in Software Development for Creative Technologies
Locations: Indianapolis

State Licensure

Does a graduate of this program need to be licensed by the State to practice their profession in Indiana and if so, will this program prepare them for licensure?

No, graduates of this program do not need to be licensed by the State to practice their profession in Indiana.

If so, please identify

The specific license(s) needed:

The State agency issuing the license(s):

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Professional Certification

What are the professional certifications that exist for graduates of similar program(s)?

- MCSD: Microsoft Certified Solutions Developer
- Adobe Certified Expert (ACE) for Developers

MCSD: Microsoft Certified Solutions Developer

What are the professional certifications that exist for graduates of similar program(s)?

The Microsoft Certified Solutions Developer is Microsoft's prevailing certification for programmers and application developers. The MCSD covers current Visual Studio versions (for the MCSD: Application Lifecycle Management cert) and also emphasizes HTML5, CSS3, JavaScript, C#, ASP.NET, Azure, Web Services, and SharePoint. Within each specific credential you'll find various specialties that focus on specific job roles or target application types. There are a lot of options to choose from in this program, which currently includes four different MCSD credentials.

Will a graduate of this program be prepared to obtain national professional certification(s) in order to find employment, or to have substantially better prospects for employment, in a related job in Indiana?

Graduates of the Software Development for Creative Technologies curriculum will have a foundation in software development which includes describing what JavaScript is and how it is implemented, defining the Document Object Model (DOM) and demonstrating control over it, creating various JavaScript

effects, utilizing the programming constructs of C++, database management, contrasting techniques for creating Web applications such as JSP, ASP and others, defining principles of operating systems and file management to name a few. These are areas covered in the MCSD Certification, illustrating the advantage graduates of the Software Development for Creative Technologies students will have when sitting for this certification.

Please explain the rationale for choosing each professional certification:

The Microsoft Certified Solutions Developer is Microsoft's prevailing certification for programmers and application developers

Please identify the single course or a sequence of courses that lead to each professional certification:

Courses that may help students further explore this certification would include: GWDA133 Fundamentals of Web Design, GWDA123 Programming Logic, GWDA273 Intermediate Web Design, SDVA103 C++ Programming I, SDVA203 C++ Programming II, SDVA213 C++ Programming III, GWDA243 Object-Oriented Scripting, GWDA283 Advanced Web Design, SDVA223 Databases I, SDVA233 Databases II, VGPA203 Design Patterns & Data Structures, SDVA202 Software Design & User Interface, SDVA212 Software Design & User Interface II, SDVA243 Secondary Languages I, SDVA333 Secondary Languages II, SDVA323 Computer Networking I, SDVA353 Computer Networking II, SDVA383 Alternative Languages, SDVA393 Operating Systems & File Systems Programming

Adobe Certified Expert (ACE) for Developers

What are the professional certifications that exist for graduates of similar program(s)?

Despite Adobe's occasionally unwanted attention for the Flash-vs-HTML5 controversy that's currently raging, and various platform security issues, Adobe certified professionals -- especially those with developer credentials -- remain in high demand. For developers looking to get into Web-based gaming, media, or other higher-end Web application areas, Adobe expertise remains a good skillset to cultivate.

Will a graduate of this program be prepared to obtain national professional certification(s) in order to find employment, or to have substantially better prospects for employment, in a related job in Indiana?

Graduates of the Software Development for Creative Technologies curriculum will have a foundation in software, gaming and development which includes designing, creating and deploying web pages, solving information architecture and communication problems with effective web site styling, animating 3D objects using industry standard techniques, demonstrating production of software user interfaces for internet systems, utilizing a variety of software user interface techniques, producing software user interfaces for desktop systems, conceptualizing 3D coordinate systems and constructing 3D model, developing a mobile app using hybrid technologies among other skills. These are areas covered in the ACE Certification, illustrating the advantage graduates of the Software Development for Creative Technologies students will have when sitting for this certification.

Please explain the rationale for choosing each professional certification:

The Adobe Certified Expert (ACE) for Developers certification is an excellent opportunity for graduates of the Software Development for Creative Technologies curriculum to expand upon their employability and marketability.

Please identify the single course or a sequence of courses that lead to each professional certification:

Courses that may help students further explore this certification would include: GWDA133 Fundamentals of Web Design, GWDA123 Programming Logic, MAAA213 3D Modeling, MAAA232 3D Animation, GWDA273 Intermediate Web Design, SDVA103 C++ Programming I, SDVA203 C++ Programming II, SDVA213 C++ Programming III, GWDA243 Object-Oriented Scripting, GWDA283 Advanced Web Design, SDVA223 Databases I, SDVA233 Databases II, VGPA203 Design Patterns & Data Structures, SDVA202 Software Design & User Interface, SDVA313 Mobile Device Programming I, SDVA343 Mobile Device Programming II, SDVA212 Software Design & User Interface II, SDVA243 Secondary Languages I, SDVA333 Secondary Languages II, SDVA323 Computer Networking I, SDVA353 Computer Networking II, SDVA383 Alternative Languages, SDVA393 Operating Systems & File Systems Programming

In addition, a graduate may be interested in joining these professional organizations:

- Association of Software Professionals- ASP is a professional trade association of software developers who are creating and marketing leading-edge applications. Members share their experiences of mastering promising technologies, benefiting from new marketing strategies and working business challenges.
- Institute of Electrical & Electronics Engineers- IEEE is the world's largest professional association dedicated to advancing technological innovation and excellence for the benefit of humanity. IEEE and its members inspire a global community through IEEE's highly cited publications, conferences, technology standards, and professional and educational activities.
- Society of Software Engineers- The Society of Software Engineers (SSE) is a student organization at RIT composed of software engineers, computer scientists, and other students. We have over fifty active members that participate in mentoring, software projects, intramural sports, and social events. We work closely with companies in the software industry to bring companies and students together.
- International Society of Software Engineers- The IAENG Society of Software Engineering (ISSE) is organized for the engineers and the scholars in the software engineering discipline. Through regularly scheduled conferences and workshops on the Software Engineering, the IAENG Society of Software Engineering serves as a forum for networking, information sharing, idea exchange and problem solving for the software engineering community.
- International Game Developers Association- As an international organization, IGDA is a global network of collaborative projects and communities comprised of individuals from all fields of game development - from programmers and producers to writers, artists, QA and localization. IGDA brings together developers at key industry conferences, in over 90 Chapters and in Special Interest Groups (SIGs) to improve their lives and their craft.
- Association of Information Technology Professionals- Founded in 1951 as NMAA and later known as DPMA, the name Association of Information Technology Professionals, AITP, was adopted in 1996. In individual chapters and as a national association, AITP seeks to advance the IT Profession through professional development, support of IT education, and national policies on IT that improve society as a whole.
- Black Data Processing Associates- BDPA is an international organization with a diverse membership of professionals and students at all levels in the fields of information technology,

computer science and related S.T.E.M fields. Members are actively engaged in serving the community through outreach and charting the future of the IT industry.

- Women in Technology- Women in Technology (WIT) is a not-for-profit organization with the mission of advancing women in technology - from the classroom to the boardroom - by providing advocacy, leadership development, networking, mentoring and technology education. With nearly 1000 members in the Washington, D.C.-area, WIT strives to meet its vision of being the premier organization empowering women to be architects of change in the technology industry.
- National Association of Programmers- The National Association of Programmers is an association dedicated to programmers, developers, consultants and other professionals and students in the computer industry. Our goal is to provide information and resources to help give our members the competitive edge in today's fast-paced, ever-changing computer industry. The National Association of Programmers also offers professional certification.

A NAP Certification is granted when an individual has demonstrated his/her knowledge and abilities relevant to the information and computer industries. Each candidate is reviewed by a member of the NAP Certification Board to ensure that the member has met certain requirements and merits certification. Not all certified members are programmers. Some are consultants, developers, students and others in the computer/IT industry.

Certified NAP members represent an elite group who are dedicated to pride and professionalism and perform their duties pursuant to the NAP Professional Code of Ethics.

- Programmers Guild- The Programmer's Guild is a professional society advocating for the advancement and preservation of our profession. Programmers are not sufficiently organized and The Programmer's Guild provides a sound approach to answering the forces increasingly putting our profession at risk. The Programmer's Guild accepts as members a wide variety of information technology professionals.

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Professional Industry Standards/Best Practices

Does the program curriculum incorporate professional industry standard(s) and/or best practice(s)?

Yes

If so, please identify

The curriculum is developed utilizing:

- market research
- industry roundtables (moderated panels of subject matter experts and professionals)
- faculty assessment and feedback

Once developed and implemented, the curriculum continues to undergo review by industry professionals by the rolling three-year to five-year review cycle. Components of this review include, but are not limited to:

- analysis from graduate surveys
- analysis from employer surveys
- input from advisory board meetings
- feedback from industry professionals through career services interactions
- roundtable discussions that are part of the review process.

The specific professional industry standard(s) and/or best practice(s):

These have been incorporated into the entire curriculum, including but not limited to course objectives and software selection.

The organization or agency, from which the professional industry standard(s) and/or best practice(s) emanate:

The standards don't emanate from a specific organization or agency. They emanate from professionals currently working in the industry.

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Program Accreditation

Does this program need specialized accreditation in order for a graduate to become licensed by the State or to earn a national professional certification, so graduates of this program can work in their profession or have substantially better prospects for employment?

No

If so, please identify the specialized accrediting agency:

This program does not need specialized accreditation.

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Transferability of Associate of Science Degrees

Since CHE/BPE policy reserves the Associate of Science designation for associate degrees whose credits apply toward meeting the requirements of a related baccalaureate degree, please answer the following questions:

Does a graduate of this A.S. degree program have the option to apply all or almost all of the credits to a related baccalaureate degree at your institution?

This is not an associate degree.

If so, please list the baccalaureate degree(s):

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Job Titles

List specific job titles and broad job categories that would be appropriate for a graduate of this program:

Applications Programmer, AV Designer/Programmer, Systems Programmer/Analyst, Developer-Programmer, Computer Programmer, JAVA Developer, Software Developer, Embedded Software Developer, Tools Programmer, Graphics Software Engineer, Animation Programmer, C/C++ Programmer, Graphics & Engine Programmer