



**ARIZONA STATE UNIVERSITY  
PROPOSAL TO ESTABLISH A NEW UNDERGRADUATE DEGREE**

This template is to be used only by programs that have received specific written approval from the Provost's office to proceed with internal proposal development and review. A separate proposal must be submitted for each individual new degree program.

**DEGREE PROGRAM INFORMATION**

**College/School(s) offering this degree:** College of Technology and Innovation

**Unit(s) within college/school responsible for program:** Department of Engineering

**If this is for an official joint degree program, list all units and colleges/schools that will be involved in offering the degree program and providing the necessary resources:** Not Joint

**Proposed Degree Name:** Information Technology

**Undergraduate Degree Type:** Select Undergraduate Degree Bachelor of Science

**If Degree Type is Other, provide proposed degree type:**

**and proposed abbreviation:**

**Proposed title of major:** Information Technology

**Is a program fee required?** Yes  No

**Is the unit willing and able to implement the program if the fee is denied?** Yes  No

**Requested effective term: Select term and year:** Fall 2013  
(The first semester and year for which students may begin applying to the program.)

**PROPOSAL CONTACT INFORMATION**

(Person to contact regarding this proposal)

**Name:** Tim Lindquist

**Title:** Professor

**Phone:** 480-727-2783

**email:** Tim.Lindquist@asu.edu

**DEAN APPROVAL**

This proposal has been approved by all necessary unit and College/School levels of review, and the College/School(s) has the resources to offer this degree program. I recommend implementation of the proposed degree program. *(Note: An electronic signature, an email from the dean or dean's designee, or a PDF of the signed signature page is acceptable.)*

**College Dean name:** Mitzi Montoya

**College Dean signature** \_See previously submitted approval email\_\_\_\_\_ **Date:** \_\_\_\_\_

**College Dean name:**  
(if more than one college involved)

**College Dean signature** \_\_\_\_\_ **Date:** \_\_\_\_\_

**ARIZONA STATE UNIVERSITY  
PROPOSAL TO ESTABLISH A NEW UNDERGRADUATE DEGREE**

This proposal template should be completed in full and submitted to the University Provost's Academic Council [[mailto: curriculumplanning@asu.edu](mailto:curriculumplanning@asu.edu) ]. It must undergo all internal university review and approval steps including those at the unit, college, and university levels. A program **may not** be implemented until the Provost's Office notifies the academic unit that the program may be offered.

---

**DEGREE PROGRAM INFORMATION**

**Undergraduate:** BS-Bachelor of Science

**If Degree Type is Other, provide proposed degree type:  
and proposed abbreviation:**

**Proposed title of major:** Information Technology

---

**1. PURPOSE AND NATURE OF PROGRAM**

- A. Brief program description** (This is a catalog type description. Include the distinctive features of the program that make it unique. Do not include program or admission requirements.)

The BS in Information Technology is a flexible, project-driven program focused on computerized acquisition, modeling, representation, and retrieval of digital data and documents. Graduates possess structured problem solving, data management, and design skills as they relate to various forms of digital data and documents. Graduates know how to manage networks and data stores, and apply and adapt computer systems and applications used to process data and documents in today's digital society. The program has a project spine in which students work, primarily in teams, on relevant projects during each semester. The culminating experience is a year-long, project experience during which the student team works with an external customer and a faculty mentor on an authentic practice-based problem related to information technology. Students in the program select a focus area (Web, Security/Administration, or Video Games) and a secondary focus in a related area that meets student educational objectives.

**2. STUDENT LEARNING OUTCOMES AND ASSESMENT**

- A. List the knowledge, competencies, and skills** students should have when they graduate from the proposed degree program. (You can find examples of program Learning Outcomes at <http://www.asu.edu/oue/assessment.html>)

Students graduating from the BS Information Technology program will:

**Technical Competence**

- a. Apply and adapt knowledge of computing and mathematics appropriate to computerized acquisition, modeling, representation and application of information technology.
- b. Analyze an information technology problem; identify and define the computing requirements appropriate to its solution.
- c. Effectively integrate information technology based solutions into the user environment.
- d. Understand and apply information technology best practices and standards.

**Design**

- e. Design, implement, evaluate, and adapt a computer-based system, process, component or program to meet desired needs.

**Communication and Team Skills**

- f. Function effectively on teams, and apply and adapt teaming strategies to influence the productivity of the team in accomplishing an information technology solution.
- g. Communicate effectively with a range of audiences.



### **Professionalism and Perspective**

- h. Identify and understand professional, ethical, legal, security, social issues and responsibilities relevant to information technology.
- i. Understand the local and global impact of information technology on individuals, organizations, and society.
- j. Recognize the need for and engage in continuing professional development.

### **Problem Solving and Critical Thinking**

- k. Use current techniques, skills and tools necessary for solving information technology problems.
- l. An understanding of best practices and standards and their application.
- m. Identify and analyze user needs and take them into account in the selection, creation, evaluation, and administration of computer-based systems.

- B. Describe the plan and methods to assess** whether students have achieved the knowledge, competencies and skills identified in the Learning Outcomes. (You can find examples of assessment methods at (<http://www.asu.edu/oue/assessment.html>))

The assessment plan has the dual purpose of determining student achievement of educational objectives and student outcomes, as well as evolution and improvement of the BS Information Technology program. Program assessment is accomplished by periodically collecting information from various sources, which is evaluated by program faculty and administration to determine appropriate program and curriculum changes. Assessment information includes: student and faculty course assessment, graduating student survey, graduating student interview, direct measures of student outcome achievement in relation to completion of key project courses, alumni survey (three and five year out), alumni employer survey, and industry council input.

Information from these sources is evaluated to determine student achievement of student outcomes and program objectives, and it is evaluated in conjunction with information received from the program's industry advisory council to refine and evolve the program. Program faculty and administration are responsible for conducting regular evaluations, as well as initiating and documenting appropriate curricular action based upon the evaluations. Each required course in the program identifies course level outcomes that are tied to program level student outcomes. The course outcomes and their mapping to program student outcomes validate each course's place in the program.

Student performance based outcome assessment is aimed at identifying student strengths and weaknesses relative to each student outcome in addition to determining whether the collective student body is adequately achieving outcomes. The assessments are used to continuously improve the BS Information Technology program. Faculty committees evaluate student performance upon completion of project spine courses and a combination of student interviews, student reflection and student portfolio. Project activities are assessed by faculty committees on a yearly basis. The culminating (senior year) project is industry-driven and project teams have industry as well as faculty mentors. Faculty committees utilize mentor input in conjunction with project artifacts to assess student strengths and weaknesses relative to program outcomes.

### **3. CURRICULUM OF THE PROPOSED PROGRAM**

Total credit hours must be 120 to include: first year composition, general studies, core/required courses, program specific electives, and any additional requirements.

- A. Major Map.** Please prepare and attach a Major Map. If there are concentrations in this degree program, prepare a separate Major Map for each one. See attached.

- B. Total credit hours required for this program:** 120

**C. Core/Required Courses.**

- i. Total required and/or core course credit hours: 36
- ii. List the name, prefix, and credit hours for each required/core class for this program

Name	Prefix	Credit Hours
Multimedia, the Internet and the Web	IFT 100	3
Object Oriented Software Development	CST 100	3
Core Data Structures with Object Oriented Programming	CST 200	3
Information Modeling, Storage and Retrieval	IFT 200	3
Computer and Network System: Organization and Administration	IFT 201	3
Foundations of Information and Computer System Security	IFT 202	3
Elements of Statistics	STP 226	3
Introduction to Interactive Media	IFT 301	3
Leading the Enterprise	TMC 330	3
Information Technology Capstone Project I	IFT 401	3
Information Technology Capstone Project II	IFT 402	3
Enterprise Planning and Implementation	TMC 470	3

**D. Program Specific Electives.**

- i. Total required program elective credit hours: 18 hours of specific focus area electives (choose one focus area) and 12 hours of secondary focus area electives (6 must be upper division). In addition, students are required to take 9 hours of free electives.
- ii. List the name, prefix, and credit hours for any program specific electives for this program:

**Focus Area 1: Web Applications: Design and Construction (Pick 18 credit hours)**

Name	Prefix	Credit Hours
Web Site Design and Internet/Web Technologies	GIT 414	3
Advanced Internet Programming	GIT 417	3
Multimedia Authoring, Scripting and Production	GIT 418	3
Web Management and E-Commerce	GIT 435	3
Principles of Distributed Software Systems	SER321	3
Principles of Database Management	SER 322	3
Web-Based Applications and Mobile Systems	SER 421	3
Server Software Programming	CST 425	3

**Focus Area 2: Computer and Network Systems: Security and Administration**

Name	Prefix	Credit Hours
Internet Networking Protocol	CST 359	3
Shell and Script Programming with UNIX	CST 383	3
Information System Security	CST 481	3
Network Forensics	CST 482	3
Systems Administration of UNIX	CST 488	3
Network Administration with TCP/IP	CST 489	3

**Focus Area 3: Video Game Design and Construction (Pick 18 hours)**

Name	Prefix	Credit Hours
Game Development I OR Introduction to Game Development	CPI 111 CST 111	3
Game Development II OR Intermediate Game Development	CPI 211 CST 211	3
Introduction to Video Game Art	GIT 211	3
Game Engine Development	CPI 311	3
3D Computer Graphics Modeling and Representation	GIT 312	3

Multimedia Design, Planning and Storyboards	GIT 314	3
Computer Animation	GIT 411	3
Principles of Distributed Software Systems	SER 321	3
Network Administration with TCP/IP	CST 489	3
Principles of Database Management	SER 322	3
Introduction to Graphics and Game Development	SER 332	3
Advanced Graphics	SER 431	3
Game Engine Architecture	SER 432	3

E. **Additional Program Requirements, if any.** List and describe any capstone experiences, milestone, and/or additional requirements for this degree program:  
**IFT 401 and IFT 402 (listed above in core requirements) are the capstone**

F. **Are any concentrations to be established under this degree program?**  Yes  No

i. If "Yes", please check one:

- Students must select a concentration as part of this degree program  
 Concentrations are optional

ii. List courses & additional requirements for the proposed concentration (s):

#### 4. NEW COURSE DEVELOPMENT

A. **Will a new course prefix(es) be required for this degree program?** Yes  No

If yes, complete the Request for a New Prefix for each prefix and submit with this proposal:

[http://provost.asu.edu/files/shared/curriculum/Prefix\\_Request.doc](http://provost.asu.edu/files/shared/curriculum/Prefix_Request.doc).

B. **New Courses Required for Proposed Degree Program.** List all new courses required for this program, including course prefix, number and course description.

**IFT 100 Multimedia, the Internet and the Web (3 credits)**

Introduction to the key concepts, tools and technologies underlying digital media, the internet and the world wide web. Introduction to media design and processing including various media such as text, audio, image, and video. Web languages, architecture, components and tools; web site design and creation. Project-based: Lecture (1)/lab (2); Term1

**IFT 200 Information Modeling, Storage and Retrieval (3 credits)**

Notations, tools and languages for modeling, representing and manipulating information; Database creation, access and management in the context of a controlling application. Analysis of information storage needs and design of an appropriate representation. Project-based. Access to information through tools and languages such as structured query language. Project-based. Lecture (1)/Lab (2). Term 3

**IFT 201 Computer and Network System: Organization and Administration (3 credits)**

Fundamentals of computer networks, computer organization, and computer operating systems. Components, tools and languages for configuring and administering computer systems. Lecture(2)/Lab(1), Term 3

**IFT 202 Information and Computer System Security (3 credits)**

Introduction to privacy, ethics, legal, social, and professional responsibilities for information technology. Principles of information security and assurance, and their implications on access. Tools and methods to identify intrusion, best security practices. Securing communications and applications. Project-based Lecture(1)/lab(2), Term 4

**IFT 301 Introduction to Interactive Media (3 credits)**

Human-computer interaction design for rich media systems. Introduction to design processes, tools, and principles for applications that are highly interactive with their users and which include multiple input/output modalities and multimedia. Project-driven, Lecture(1)/Lab(2). Term 5

**IFT 401 Information Technology Capstone Project I (4 credits)**

First half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier course work. Project, Lecture (1)/Lab(3) Term7.

**IFT 402 Information Technology Capstone Project II (4 credits)**

Second half of a comprehensive project experience based on cumulative knowledge and skills gained in earlier course work. Project, Lecture (1)/Lab(3) Term8.

**TMC 330 Leading the Enterprise (3 Credits)**

Course Description: Essential practices for managers, including planning, organizing, leading, and controlling the enterprise. Current issues affecting managers are studied, such as sustainability, environmental protection, work groups, globalization, technology management, entrepreneurship, diversity, and continuous improvement.

**TMC 470 Enterprise Planning and Implementation (3 Credits)**

**Prereq: TMC 330.**

Course Description: Tools and techniques for effective design and management of enterprise projects and programs are investigated and tested using computer applications. Teambuilding and leadership skills are developed and demonstrated in course projects

5. **PROGRAM NEED.** Explain why the university needs to offer this program (include target audience and market).

The BS Information Technology will increase ASU's ability to meet the regional need for information technology professionals and facilitate a stronger regional technology industry. The area of Information Technology has recently been added to by ABET as an area they accredit and there is a defined body of knowledge for the area. No other ASU degree provides the technical computing and IT content needed to function in the IT marketplace. Likewise, we envision many students selecting this option that have a desire for a technical degree that does not require numerous advanced mathematics and science courses (e.g. calculus, differential equations, and physics), required by other ASU computing degrees. The program's unique project-driven, professional, and interdisciplinary approach will attract a new set of students than are currently attracted to ASU technology and computing programs, and it will produce graduates with a knowledge and skill-set in computer systems analysis, information security, web development, computer network architecture, as well as computer and systems administration. Some graduates will develop skill sets in game design and development, or in allied fields such as software development, and graphic design. The program will add quality and capacity to ASU's technology offerings through a differentiated curricular approach and outcome-set.

The Bureau of Labor Statistics Occupational Handbook (<http://www.bls.gov/oco/home.htm>) projects information technologists as among the fastest growing occupations in the period 2010-2020. The program prepares graduates for careers as computer systems analysts, database administrators, network and computer security analysts, web designers, game user-interface production, and computer systems administrators. All are occupations projected by the bureau of labor statistics as fast growing, requiring a bachelor's degree, and highly paid.

6. **IMPACT ON OTHER PROGRAMS.** List other academic units that might be impacted by the proposed program and describe the potential impact (e.g., how the implementation of this program might affect student headcount/enrollment, student recruitment, faculty participation, course content, etc. in other programs). Attach letters of collaboration/support from impacted programs.

The proposed program utilizes many of the specialized courses offered by other programs within the College of Technology and Innovation. Students in the BS Information Technology program may select a concentration for specialization (Web technology, game user interface processing, or

computer and network security and administration). They also select an individualized secondary focus that facilitates extending focus on the core information technologies or through an individualized set of courses meeting student educational objectives, such as business process, engineering, software engineering, human-centered computer interface design, or networking. The BS Information Technology program is different from related programs offered by ASU (BS Computer Information Systems, BS Computer Science, BS Applied Computing, BS Applied Computer Science, BS Software Engineering) by targeting a differentiable career path for graduates requiring technology specific skills, such as database, computer systems, or cyber-security analysis.

7. **PROJECTED ENROLLMENT** How many new students do you anticipate enrolling in this program each year for the next five years? Please utilize the following tabular format.

5-YEAR PROJECTED ANNUAL ENROLLMENT					
	1 <sup>st</sup> Year	2 <sup>nd</sup> Year (Yr 1 continuing + new entering)	3 <sup>rd</sup> Year (Yr 1 & 2 continuing + new entering)	4 <sup>th</sup> Year (Yrs 1, 2, 3 continuing + new entering)	5 <sup>th</sup> Year (Yrs 1, 2, 3, 4 continuing + new entering)
Number of Students Majoring (Headcount)	30	65	110	160	215

8. **ACCREDITATION OR LICENSING REQUIREMENTS (if applicable).** Provide the names of the external agencies for accreditation, professional licensing, etc. that guide your curriculum for this program, if any. Describe any requirements for accreditation or licensing.

The program will seek voluntary professional accreditation from The Accreditation Board for Engineering and Technology (ABET). ABET Criteria for Accrediting Computing Programs (see: <http://www.abet.org>) include general and program criteria for Information Technology. The program has been designed to satisfy these criteria, and accreditation will be sought the year subsequent to the first graduating class (year four). The general computing criteria are shared with information technology, computer science and information systems programs. The ABET criteria includes sections on: Students (advising, student performance, outcome achievement, and program audit), Educational Objectives, Program Outcomes, Continuous Improvement, Curriculum, Faculty, Facilities, Support, and Information Technology Program Specific Criteria.

9. **FACULTY and STAFF**

- a. **Current Faculty.** List the name, rank, highest degree, area of specialization/expertise and estimate of the level of involvement of all current faculty who will teach in the program.

**Ashish Amresh**, Assistant Professor, Ph.D. Video Game Development  
**Amiya Bhattacharya**, Lecturer, Ph.D. Network Security, Wireless Sensor Networks  
**Srividya Kona Bansal**, Ph.D. Service Oriented Architectures, Software Engineering  
**Penny Dolin**, Lecturer Sr., MS, Graphic Information Technology  
**Arnaud Ehgner**, Lecturer, Master of Computer Business Admin, Video Game Art  
**John Femiani**, Assistant Professor, Ph.D. Computer Science, Visual Analytics  
**Ashraf Gaffar**, Assistant Professor, Ph.D. Human-Computer Interface Design  
**Kevin Gary**, Associate Professor, Ph.D. Software Engineering, Web Applications  
**Arbi Ghazarian**, Assistant Professor, Ph.D. Software Requirements Engineering  
**Timothy Lindquist**, Professor, Ph.D. Mobile Systems, Computer Science  
**Jane Martin**, Lecturer, M Ed, Web Technology, Information Design  
**Deborah Prewitt**, Lecturer, MS of Technology, Web and Multimedia Design  
**Laurel Ralston**, Lecturer, EdD, Online Learning, Human-Computer Interface Design  
**Anshuman Razdan**, Professor, Ph.D. Computer Science, Visual Analytics  
**Thomas Schildgen**, Professor, Ph.D. Graphic Information Technology  
**Richard Whitehouse**, Lecturer Sr., MS Mobile Systems, Software Engineering

The BS in Information Technology is envisioned as a growth program within the Department of Engineering and College of Technology and Innovation. All listed faculty will participate extensively to this growth vision, while at the same time supporting existing programs.

- b. **New Faculty.** Describe the new faculty hiring needed during the next three years to sustain the program. List the anticipated hiring schedule and financial sources for supporting the addition of these faculty.

n/a

- c. **Administration of the program.** Explain how the program will be administered for the purposes of admissions, advising, course offerings, etc. Discuss the available staff support.  
The program will be administered by the Department of Engineering at the Polytechnic campus. The Chair, Dr. Ann McKenna and departmental support staff will provide administrative oversight. Advising will be provided by the College of Technology and Innovation using the same model currently in use for all other programs in the college. Admission, registration, course scheduling, and graduation (audit) support will be provided as is currently provided for the other programs in the Department of Engineering – through a combination of support at the departmental, college and university levels.

**10. RESOURCES (necessary to launch and sustain the program)**

- a. Describe any new resources required for this program's success, such as new support staff, new facilities, new library resources, new technology resources, etc.

Existing resources to initiate the program will be reassigned and shared with other functions within the Department of Engineering and the College of Technology and Innovation. This includes staff support for computing resources, software, and laboratories. Program specific computational resources (hardware and software) already exist in support of related programs in the Department of Engineering.

- b. Explain where you will get the resources to support this program.

These resources will be initially shared to start the program, and as the program grows, further resources will be acquired based on student need. Expenditures for new resources will be come from a combination of BS Information Technology student tuition and fees.



**APPENDIX**  
**OPERATIONAL INFORMATION FOR UNDERGRADUATE PROGRAMS**  
(This information is used to populate the [Degree Search/catalog website.](#))

**1. Program Name (Major):** B.S Information Technology

**2. Program Description** (150 words maximum)

Want to be the individual who is responsible for designing, selecting, implementing, and managing computer-based information solutions? The information technology graduate can design and create effective solutions to today's knowledge-based problems. Graduates design video games, create network architectures, configure and administer complex computer and database systems, create effective web sites, or design and process interactive media solutions. In the bachelor's in information technology program, you will create a project solution every semester and hone your team and presentation skills. In addition to selecting a primary focus area, (web, video games or security/administration) you'll be able to create your own secondary focus area that meets your specific career objectives.

**3. Contact and Support Information**

Building Name, code and room number: ( <a href="#">Search ASU map</a> )	TECH 101
Program office telephone number: (i.e. 480/965-2100)	480 727 1874
Program Email Address:	egr@asu.edu
Program Website Address:	<a href="http://technology.asu.edu/engineering">http://technology.asu.edu/engineering</a>

**4. Delivery/Campus Information Delivery:** on campus ground– i-courses

*Note: Once students elect a campus or On-line option, students will not be able to move back and forth between the on-campus and the ASU Online options. Approval from the Office of the Provost and Philip Regier (Executive Vice Provost and Dean) is required to offer programs through ASU Online.*

**5. Campus/Locations:** indicate all locations where this program will be offered.

Downtown Phoenix       Polytechnic       Tempe       West      Other:

**6. Additional Program Description Information**

A. Additional program fee required for this program?      No

B. Does this program have a second language requirement?      No

**7. Career Opportunities & Concentrations**

Provide a brief description of career opportunities available for this degree program. If program will have concentrations, provide a brief description for each concentration. (150 words maximum)

Graduates of the information technology bachelor's program are well-qualified for careers in the management of IT departments and functions. This degree couples the technical skills with the business skills needed to manage technical functions. Some graduates may pursue careers as technical support staff based on the focus area and secondary skills they achieve.

Focus Areas: (Graduates will have the ability to manage technical professionals in these areas)  
 The focus area in video game design and construction explores the tools, frameworks, technologies and processes underlying the design, construction, deployment and support of video games. Students learn the graphic design processes, guidelines and tools for video games.

The focus area in computer and network systems: security and administration provides the graduate with the concepts underlying information assurance, securing computer applications, and secure communication of information. These skills are combined with knowledge in areas of computer systems and networking design, configuration and administration.

The focus area in web applications: design and construction explores the tools, languages and frameworks for designing and realizing complex web sites. Students have the options in the information technology program to delve into the back-end of complex web applications to augment their knowledge of the web in the context of principles of human-computer interface design.

**8. Additional Admission Requirements**

If applicable list any admission requirements (freshman and/or transfer) that are higher than and/or in addition to the university minimum undergraduate admission requirements.)

None

**9. Keywords**

List all keywords used to search for this program. Keywords should be specific to the proposed program. Computing, Computer, Software, Graphic, Game Development, Game Design, Video Game, Web, Web Applications, World Wide Web, Network Administration, Network Security, Project Management, Information Technology, Business Process, Animation, Multimedia

**10. Advising Committee Code**

List the existing advising committee code to be associated with this degree. UGTIEN

*Note: If a new advising committee needs to be created, please complete the following form:*

[Proposal to create an undergraduate advising committee](#)

**11. First Required Math Course**

List the first math course required in the major map. MAT 210 Brief Calculus

**12. Western Undergraduate Exchange (WUE) Eligible:**

Has a request been submitted to the Provost by the Dean to consider this degree program as eligible for [WUE?](#)

YES, We will request WUE eligibility with the Provosts office for this degree.

*Note: No action will be taken during the implementation process with regards to WUE until approval is received from the Provost.*

**13. Area(s) of Interest**

A. Select **one (1)** primary Area of Interest from the list below that applies to this program.

- |  |   |
|--|---|
| <input type="checkbox"/> <a href="#"><u>Architecture, Construction &amp; Design</u></a>    | <input type="checkbox"/> <a href="#"><u>Engineering &amp; Technology</u></a>                |
| <input type="checkbox"/> <a href="#"><u>Artistic Expression &amp; Performance</u></a>      | <input type="checkbox"/> <a href="#"><u>Environmental Issues &amp; Physical Science</u></a> |
| <input type="checkbox"/> <a href="#"><u>Biological Sciences, Health &amp; Wellness</u></a> | <input type="checkbox"/> <a href="#"><u>Interdisciplinary Studies</u></a>                   |
| <input type="checkbox"/> <a href="#"><u>Business, Management &amp; Economics</u></a>       | <input type="checkbox"/> <a href="#"><u>Languages &amp; Cultures</u></a>                    |
| <input type="checkbox"/> <a href="#"><u>Communication &amp; Media</u></a>                  | <input type="checkbox"/> <a href="#"><u>Law &amp; Justice</u></a>                           |
| <input checked="" type="checkbox"/> <a href="#"><u>Computing &amp; Mathematics</u></a>     | <input type="checkbox"/> <a href="#"><u>Social Science, Policies &amp; Issues</u></a>       |
| <input type="checkbox"/> <a href="#"><u>Education &amp; Teaching</u></a>                   |   |

B. Select **any** additional Areas of Interest that apply to this program from the list below.

- |   |  |
|---|--|
| <input type="checkbox"/> <a href="#">Architecture, Construction &amp; Design</a>    | <input checked="" type="checkbox"/> <a href="#">Engineering &amp; Technology</a>     |
| <input type="checkbox"/> <a href="#">Artistic Expression &amp; Performance</a>      | <input type="checkbox"/> <a href="#">Environmental Issues &amp; Physical Science</a> |
| <input type="checkbox"/> <a href="#">Biological Sciences, Health &amp; Wellness</a> | <input type="checkbox"/> <a href="#">Interdisciplinary Studies</a>                   |
| <input type="checkbox"/> <a href="#">Business, Management &amp; Economics</a>       | <input type="checkbox"/> <a href="#">Languages &amp; Cultures</a>                    |
| <input checked="" type="checkbox"/> <a href="#">Communication &amp; Media</a>       | <input type="checkbox"/> <a href="#">Law &amp; Justice</a>                           |
| <input type="checkbox"/> <a href="#">Computing &amp; Mathematics</a>                | <input type="checkbox"/> <a href="#">Social Science, Policies &amp; Issues</a>       |
| <input type="checkbox"/> <a href="#">Education &amp; Teaching</a>                   |  |

The following fields are to be completed by the Office of the Executive Vice President and Provost of the University.

CIP Code: \_\_\_\_\_

Plan Code:


**2013 - 2014 Major Map**  
**Information Technology, BS (Proposed)**

Term 1	0 - 16 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
		CST 100: Object-Oriented Software Development	3	C	<ul style="list-style-type: none"> <li>CTI 101 is required for freshmen students only. Not required for transfer student.</li> <li>An SAT, ACT, Accuplacer, or TOEFL score determines placement into first-year composition courses.</li> <li>An ASU math placement score, using ALEKS, determines placement in mathematics and science courses.</li> </ul>
		CTI 101: Success in Technology & Innovation	1		
		IFT 100: Multimedia, the Internet and the Web	3		
		MAT 210: Brief Calculus (MA)	3	C	
		ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: English for Foreign Students	3	C	
		Social and Behavioral Sciences (SB) AND Global Awareness (G)	3		
		Term hours subtotal:	16		
Term 2	17 - 32 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
		CST 200: Object-Oriented Software Development II	3	C	
		Elective	3		
		MAT 243: Discrete Mathematical Structures	3	C	
		ENG 101 or ENG 102: First-Year Composition OR ENG 105: Advanced First-Year Composition OR ENG 107 or ENG 108: English for Foreign Students	3	C	
		Natural Science - Quantitative (SQ)	4		
		Term hours subtotal:	16		
Term 3	33 - 48 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
		IFT 200: Information Modeling, Storage and Retrieval	3		
		IFT 201: Computer and Network Systems: Organization and Administration	3		
		Humanities, Fine Arts and Design (HU) AND Historical Awareness (H)	3		
		Literacy and Critical Inquiry (L)	3		
		Natural Science - Quantitative (SQ) OR Natural Science - General (SG)	4		
		Term hours subtotal:	16		
Term 4	49 - 63 Credit Hours	Critical course signified by	Hours	Minimum Grade	Notes
		IFT 202: Foundations of Information and Computer System Security	3		
		STP 226: Elements of Statistics (CS)	3	C	
		Humanities, Fine Arts and Design (HU) AND Cultural Diversity in the U.S. (C)	3		
		Social and Behavioral Sciences (SB)	3		
		Elective	3		
		Term hours subtotal:	15		
Term 5	64 - 78 Credit Hours		Hours	Minimum Grade	Notes
		IFT 301: Introduction to Interactive Media	3		
		TMC 330: Leading the Enterprise	3		
		Complete 2 courses: Upper Division Track Focus Area Course	6		
		Secondary Focus Area	3		
		Term hours subtotal:	15		
Term 6	79 - 93 Credit Hours		Hours	Minimum Grade	Notes
		Elective	3		
		Elective	3		
		HST 318: History of Engineering ((L or SB) & G) OR Upper Division Social and Behavioral Sciences (SB) or Upper Division Humanities, Fine Arts and Design (HU)	3		



Upper Division Track Focus Area Course	3		
Secondary Focus Area	3		
Term hours subtotal:		15	
<b>Term 7</b> 94 - 108 Credit Hours	<b>Hours</b>	<b>Minimum Grade</b>	<b>Notes</b>
IFT 401: Information Technology Capstone Project I	3		
TMC 470: Enterprise Planning & Implementation	3		
Complete 2 courses: Upper Division Track Focus Area Course	6		
Upper Division Secondary Focus Area	3		
Term hours subtotal:		15	
<b>Term 8</b> 109 - 120 Credit Hours	<b>Hours</b>	<b>Minimum Grade</b>	<b>Notes</b>
IFT 402: Information Technology Capstone Project II	3		
TWC 347: Written Communication for Managers (L) OR TWC 401: Principles of Technical Communication (L) OR TWC 421: Principles of Writing with Technology (L) OR TWC 431: Principles of Technical Editing (L) OR TWC 446: Technical and Scientific Reports (L) OR Upper Division Literacy and Critical Inquiry (L)	3		
Upper Division Track Focus Area Course	3		
Upper Division Secondary Focus Area	3		
Term hours subtotal:		12	

- **Secondary Focus Area:** A secondary focus area is a group of courses comprising of 12 or more credit hours (minimum 6 hours upper division at the 300 or 400 level) which form a coherent theme. For example, all courses may share a common subject prefix. Students work with a faculty member or academic success specialist to identify their secondary focus area.

<b>Computer and Network Systems: Security and Administration</b>	<b>Video Game Design and Construction (select 6 courses from the following)</b>	<b>Web Applications: Design and Construction (select 6 courses from the following)</b>
CST 359: Internet Networking Protocol	CST 111: Introduction to Game Development or CPI 111: Game Development I (CS)	CST 425: Server Software Programming
CST 383: Shell and Script Programming with UNIX	CST 211: Intermediate Game Development or CPI 211: Game Development II	GIT 414: Web Site Design and Internet/Web Technologies
CST 481: Information System Security	CPI 311: Game Engine Development	GIT 417: Advanced Internet Programming
CST 482: Network Forensics	CST 489: Network Administration with TCP/IP	GIT 418: Multimedia Authoring, Scripting and Production
CST 488: Systems Administration of UNIX	GIT 211: Introduction to Video Game Art	GIT 435: Web Management and E-Commerce
CST 489: Network Administration with TCP/IP	GIT 312: 3-D Computer Graphics Modeling and Representation (CS)	SER 321: Principles of Distributed Software Systems or CST 420: Principles of Distributed Software Systems
	GIT 314: Multimedia Design, Planning and Storyboards	SER 322: Principles of Database Management or CST 433: Principles of Database Management
	GIT 411: Computer Animation	SER 421: Web-Based Applications and Mobile Systems
	SER 321: Principles of Distributed Software Systems or CST 420: Principles of Distributed Software Systems	
	SER 322: Principles of Database Management or CST 433: Principles of Database Management	
	SER 332: Introduction to Graphics and Game Development	
	SER 431: Advanced Graphics	
	SER 432: Game Engine Architecture	

**Total Hours:** 120  
**Upper Division Hours:** 45 minimum  
**Major GPA:** 2.00 minimum  
**Cumulative GPA:** minimum  
**Total hrs at ASU:** 30 minimum  
**Hrs Resident Credit for Academic Recognition:** minimum  
**Total Community College Hrs:** maximum

**General University Requirements Legend**

- General Studies Core Requirements:**
- Literacy and Critical Inquiry (L)
  - Mathematical Studies (MA)
  - Computer/Statistics/Quantitative Applications (CS)
  - Humanities, Fine Arts and Design (HU)
  - Social and Behavioral Sciences (SB)
  - Natural Science - Quantitative (SQ)
  - Natural Science - General (SG)

**General Studies Awareness Requirements:**

- Cultural Diversity in the U.S. (C)
  - Global Awareness (G)
  - Historical Awareness (H)
- First-Year Composition

General Studies designations listed on the major map are current for the 2013 - 2014 academic year.

## Julie Ramsden

---

**From:** Scott Danielson  
**Sent:** Friday, November 02, 2012 2:32 PM  
**To:** curriculumplanning@asu.edu  
**Cc:** Frederick Corey; Kathy Wigal; Mitzi Montoya; Chell Roberts; Ann McKenna  
**Subject:** Revised BS in IT proposal and statement of support  
**Attachments:** CTI BS in IT Proposal Revised with Appendix 11-2-12.docx; Carey School of Business Email of Support for CTI BS in IT.pdf

All,

Attached is revised proposal for the College of Technology and Innovation's proposed BS in Information Technology degree. The revisions occurred as part of the process of securing the Carey School of Business's support for the proposed degree. That email of support is also attached. The CTI requests an expedited approval process for this proposal, originally submitted by the deadline for new proposals.

As allowed by previous Curriculum Planning group correspondence, the attached revised proposal is still in the old format but the embedded appendix portion is in the new format.

The revised major map, reflecting the changes requested by Carey, has been submitted via the BMM tool.

Thank you.

Scott Danielson, Ph.D., P.E.  
Associate Dean for Academic Programs  
College of Technology and Innovation  
Arizona State University  
480-727-1185

## Scott Danielson

---

**Subject:** FW: Revised BS IT

**From:** Amy Hillman  
**Sent:** Monday, October 29, 2012 6:30 PM  
**To:** Mitzi Montoya  
**Subject:** RE: Revised BS IT

Thanks Mitzi- we appreciate the changes and approve.

Amy

\*\*\*\*\*  
Amy J. Hillman  
Rusty Lyon Chair of Strategy  
Executive Dean  
W. P. Carey School of Business  
Arizona State University  
[amy.hillman@asu.edu](mailto:amy.hillman@asu.edu)  
\*\*\*\*\*

---

**From:** Mitzi Montoya  
**Sent:** Monday, October 29, 2012 11:45 AM  
**To:** Amy Hillman  
**Subject:** FW: Revised BS IT

Hi Amy -

Please see summary below and attached revised BS in Information Technology proposal. We made all recommended changes with the exception of the suggested renames for two courses of the courses. We can't change the names of the courses to include something about IT because these courses are used in other degrees (e.g., engineering, environmental technology management, aviation, etc).

Please let me know if WPC is ok with us proceeding with the degree proposal with these modifications.

Thanks!

Mitzi

---

**From:** Chell Roberts  
**Sent:** Monday, October 29, 2012 11:09 AM  
**To:** Mitzi Montoya  
**Cc:** Scott Danielson  
**Subject:** Revised BS IT

Mitzi

Attached is the revised BS IT proposal as requested.

We have implemented the following recommended changes from the W.P. Carey IS Department.

A. The paragraph introducing the purpose and nature of the program (2.1. A) was changed to the exact recommended wording.

B. The recommendation on Page 2, 2.A.a -- change "use of information" to "retrieval of digital data and documents"

Was changed to "applications of information technology."

C. The recommendation on Page 3, h – *"change "information systems" to "information technology" ; was implemented as requested*

D. The recommendation on Page 3, B – *"change "refine and evolve program" to "refine and evolve the program" was implemented as recommended.*

E. The recommendation on Page 5 E. – *"The courses are referred to as IFS 401 and 402 in section E, but referred to as IFT 401 and 402 at the bottom of the page. We assume no new prefix has been created, and the IFS is a typo." Was changed as recommended.*

F. The recommendation for the last paragraph in section 6 *"The last paragraph states that no other ASU degree has the technical content leading to careers that "focus on the IT to function for a company." This sentence is confusing. It also seems inconsistent with the proposed nature of the program as it stated in the current proposal. We do believe the statement, although poorly worded, does more accurately fit the "Purpose and Nature of the Program," page 1, section 1, suggested in Point #1 above. The paragraph was removed.*

--

Chell Roberts  
Executive Dean  
College of Technology and Innovation