BACCALAUREATE PROPOSAL APPLICATION
Form No. BAAC-02

Section 1007.33(5)(d), Florida Statutes, and Rule 6A-14.095, F.A.C., outline the requirements for a Florida College System baccalaureate program proposal. The completed Proposal form shall by submitted by the college president to the Chancellor of the Florida College System at ChancellorFCS@fldoe.org. In addition, a printed version shall be mailed to the Division of Florida Colleges at 325 West Gaines Street, Suite 1544, Tallahassee, Florida 32399-0400.

The proposal requires completion of the following components:

- Program summary
- Program description
- Workforce demand and unmet need
- Planning process
- Enrollment projections and funding requirements
- Student costs: tuition and fees
- Program implementation timeline
- Facilities and equipment specific to program area
- Library and media specific to program area
- Academic content
- Program termination
- Appendix tables
- Supplemental materials

Florida College System Institution Name: Santa Fe College
Florida College System Institution President: Dr. Jackson Sasser

PROGRAM SUMMARY		
1.1	Program Name:	Information Systems Technology
1.2	Degree type:	☐ Bachelor of Science X Bachelor of Applied Science
1.3	How will the program be delivered (check all that apply):	X Face-to-face X Hybrid X Online
1.4	List the counties in the college's service district:	Alachua, Bradford
1.5	Degree CIP code (6 digit):	11.0103
1.6	Anticipated program implementation date:	January 2016
1.7	What is the primary associate degree pathway for admission to the program?	Associate of Science (AS) in Networking Services Technology & AS in Programming and Analysis

1.8	Is the degree a STEM focus area?	X Yes	☐ No
1.9	List program concentration(s) (if applicable):		
1.10	Will the program be designated such that an eligible student will be able to complete the program for a total cost of no more than $10,000 in tuition and fees?	☐ Yes	X No

PROGRAM DESCRIPTION

2.1 Describe the program.

Santa Fe College (SF) proposes offering a Bachelor of Applied Science (BAS) in Information Systems Technology (IST) beginning in the Spring of 2016, according to the authority granted in Florida Statute sections 1007.33. The proposed degree will prepare students to be proficient at a higher level of application and system programming, network design and management, and database design and management, as well as provide the necessary professional development necessary for the sophisticated workforce demanded by the growing local information technology industry. The new bachelor's degree is specifically designed to articulate with Santa Fe College's Associate of Science (AS) in Networking Services Technology and AS in Programming and Analysis.

WORKFORCE DEMAND AND UNMET NEED

3.1 Describe the career path and potential employment opportunities for graduates of the program.

A wide variety of computer-related jobs are currently in high demand in Alachua and Bradford Counties. Graduates from the proposed program will be able to build upon the skill sets they developed in our AS in Networking Services Technology and AS in Programming and Analysis and complete upper-division courses in management; computer operating systems; information system design and analysis, database administration; and other courses related to web design, mobile devices, and computer networks. This more specialized training will enable graduates from the proposed BAS to find employment as computer and information systems managers, computer systems analysts, computer programmers, software developers, web developers, database administrators, and network and computer systems administrators or specialists. The job prospects for graduates of this proposed program is excellent.

3.2 Describe the workforce demand, supply and unmet need for graduates of the program that incorporates, at a minimum, the shaded information from appendix tables A.1.1 to A.1.3.

The Florida Department of Economic Opportunity (FDEO) estimates that there were 2175 jobs in Alachua and Bradford Counties during 2014 for computer specialists and computer information system managers. An estimated 75 jobs per year will become available in Alachua and Bradford counties from 2014-2022 for these types of professionals. Although the University of Florida offers undergraduate programs in Computer Engineering and Computer Science, its graduates are being recruited on a national scale, and no college or university in North Central Florida provides a baccalaureate program in information technology to meet immediate regional workforce needs. Seminole State College of Florida (SSCF) and Indian River State College (IRSC) are the two closest public, higher education institutions providing baccalaureate training in information technology. Computer systems analysts, software developers, and computer programmers have been determined to be three of the fifteen occupations in Florida demanding bachelor's-trained professional that have the greatest gap between supply and demand (Appendix D2). Computer specialists and computer information system managers earned $70,000 - $134,000 on average throughout Florida in 2014 (Appendix D3).

3.3 Describe any other evidence of workforce demand and unmet need for graduates as selected by the institution, which may include qualitative or quantitative data information, such as local economic development initiatives, emerging industries in the area or evidence of rapid growth, not reflected in the data presented in appendix tables A.1.1 to A.1.3. For proposed programs without a listed SOC linkage, provide a rationale for the identified SOC code(s).

The University of Florida is the only university in Alachua and Bradford County. It offers a BS in Computer Engineering (CIP 14.0901) and a BS in Computer Science (CIP 11.0101), not a degree in Information Technology (CIP11.0103), the baccalaureate program proposed by Santa Fe. During the 2013-2014 academic year, 67 computer engineering and 70 computer science majors earned a bachelor's degree at this university. However, as Dr. Cammy Abernathy, Dean of the University of Florida's College of Engineering, acknowledges in her letter of support, most of these graduates are placed in national and international firms (Appendix B9). Moreover, these academic programs are different in content and focus from the BAS proposed here. UF's curriculum for the BS in Computer Engineering and the BS in Computer Science focuses on computer systems, hardware, and software as well as theory and application (Appendix D4). Students must demonstrate a strong foundation in advanced calculus, chemistry and physics as prerequisites to program admission. By contrast, the curriculum for the BAS in IST proposed here incorporates advanced courses in programming, project management, IT operations, and other practical topics identified by local employers as the most essential for their continued growth and success. These courses are designed for AS-trained individuals who possess good, technical knowledge of computer programming and networking, and

whose professional development needs are more applied and less theoretical (Appendix D5).

Employers in our workforce region have repeatedly expressed a need for graduates proficient at a higher level of application and system programming, network design and management, and database design and management than what our college's existing AS programs can provide. Entry level positions like software developers, web developers, database administrators, and network and computer systems architects that normally require an associate degree according to the CIP to SOC crosswalk, require a higher level of expertise in our service district. Employers explain this as product of the growing "sophistication" of the local job market (Appendices B3 and B5) which needs baccalaureate-trained workers who can program, develop and test software, administer computer databases, oversee networking and computer systems, analyze computer systems, and manage computer and information systems. In other words, employers have asked for an advanced, workforce-oriented program that can provide them with the level of expertise that the evolved local information technology job market requires in skills that are introduced in our existing AS programs. This has been expressed repeatedly in our conversations with employers, the GIT forums, and the letters of support that have been submitted.

Currently, the primary way for local employers to cover the growing gap between available job openings and available trained personnel is to import the needed professionals or outsource the work to other countries or regions of the United States. Our local employers have asked for a four year program that will provide our AS graduates with the extra training that will bring them up to the local needs level, both technically and professionally, that is currently being filled with imported talent or outsourced jobs.

Our AS students and graduates, even those with a high level of expertise, are aware that they are often excluded from candidate pools for many positions because they lack a bachelor's degree (Appendices A11 and A12). This was not always the case. But in order for our ITE program to remain relevant locally, it must provide baccalaureate-level training to our students. The proposed BAS program is necessary not only to cover the need for skills commonly associated with baccalaureate degrees, but in our area to cover the needs normally associated with an AS degree.

3.4 If the education level for the occupation identified by the Florida Department of Economic Opportunity presented in appendix table A.1.1 is below a bachelor's degree, provide justification for the inclusion of that occupation in the analysis.

Employers in our workforce region have repeatedly expressed a need for graduates proficient at a higher level of application and system programming, network design and management, and database design and management. In other words, they need baccalaureate-trained workers who can program, develop and test software, administer computer databases, oversee networking and computer systems, analyze computer systems, and manage computer and information systems.

PLANNING PROCESS

4.1 Summarize the internal planning process.

The possibility of offering a baccalaureate program in Information Systems Technology was first discussed in an Information Technology Education faculty meeting on August 24, 2012. The matter was then addressed with other Santa Fe administrators during the Fall of 2012. Those involved in this initial discussion included

- Dr. Jackson Sasser, President of Santa Fe College
- Dr. Ed Bonahue, Provost and Vice President for Academic Affairs
- Dr. Vilma Fuentes, Assistant Vice President for Academic Affairs
- Mr. Jorge Ibañez, Information Technology Education Director

The group discussed the possibility of offering a new BAS in Information Systems Technology, local workforce need for this degree, internal capacity, and the proposal process. All agreed that one baccalaureate degree with two tracks of specialization in programming and networking but shared competencies would be most desirable in our service area. In order to expedite our work, it was decided that we would form a task force comprised of a representative from each discipline chaired by Jorge Ibanez, the Information Technology Education Director, to design and manage the project as well as report to and consult with the respective departments.

The task force has met multiple times from 2013-2015 to develop and refine the proposed program. It has studied labor demand projections for both our immediate service district and larger North Central Florida region, as well as discussed our internal capacity to help meet this demand. Task force members have surveyed and held conversations with local information technology firms to confirm their labor needs. In addition, they have considered the recommendations that have emerged from the ITE Advisory Committee and the Gainesville Information Technology (GIT) forums organized by the Chamber of Commerce.

A Letter of Intent was drafted, reviewed by the Santa Fe District Board of Trustees on September 17, 2013 (Appendix A1) and transmitted to the Department of Education (Appendix A2). Santa Fe College librarian Diana

Mathews prepared the library benchmark section for this proposal (Appendix C). In the Fall of 2013, the Information Systems Technology BAS task group met again to discuss the application process with Assistant Vice President Vilma Fuentes. Provost Ed Bonahue asked the team to begin compiling the application for submission.

The ITE Department faculty and task force members studied and discussed other comparable information technology programs in the state, reviewed their curriculum, and proposed one that best responds to local employer needs. The framework for a curriculum that is being proposed here involves a restructuring and revision of the Santa Fe's whole ITE program, including the Associate of Science programs. This framework was presented to and discussed with the full ITE faculty on March 20, 2013 prior to a meeting with the ITE Advisory Committee in the Spring of 2014 (Appendix A3). This curriculum proposal guided the conversation with our Advisory Committee March 14, 2014 where we asked for their input and final development of the proposed BAS program proposal (Appendix A4). Once the curriculum was finalized it was presented to the Provost, where it met with approval.

4.2 Summarize the external planning process.

The conversations with the BAS Task Force and ITE faculty have built on the input received from local employers at the GIT forums held on December 4, 2012 and January 31, 2013 (Appendices A8 and A9), our annual meetings with the ITE Advisory Committee in 2014 and 2015 (Appendices A4 and A5), and multiple face-to-face conversations with local employers since December 2012.

GIT is a local initiative led by the Chamber of Commerce and Career Source (previously called FloridaWorks). Its purpose is to bring together the local area's growing number of information technology-related companies and encourage their collaboration to solve common challenges. Santa Fe College's ITE Director, Jorge Ibañez, is a founding member of the group. He has used the GIT forums to gather information about local companies' needs, ask their opinion about the desirability of a BAS in Information Systems Technology program, and garner their suggestions as to how such a program should be structured.

In addition to these GIT forums, Director Ibañez has held individual consultations with some of the more relevant and engaged IT employers since the late Summer of 2013 to determine their needs and interest in a possible new BAS in IST program. The companies that were consulted included both local start-ups such as Digital Brands and Shadow Health (first consulted on December

20, 2012), as well as larger employers such as Infinite Energy (first consulted on January 28, 2013), Infotech (first consulted on May 21, 2013), 352 Media Group (first consulted on July 11, 2013), Grooveshark (first consulted on July 26, 2013), and Mobiquity (first consulted on July 26, 2013). These same employers were consulted again during the Spring of 2015. All repeatedly expressed their desire to hire employees with advanced technical training beyond the AS level. More specifically, they expressed their desire to see Santa Fe expand its existing AS programs into a BAS in Information Technology that was different from the University of Florida's Bachelor of Science in Computer Science. During the Spring 2015 local employers also indicated that the labor supply situation had been aggravated in just the year or so since they first requested baccalaureate-trained information technology graduates. Letters of support have been received from several local employers emphasizing this growing need and shortage of labor supply (Appendices B1-B9).

Our proposed BAS program would add advanced training in the most important programming languages and systems technology already introduced at the AS level, and it would provide the space to add instruction in important employability skills, professional development, and managerial and supervisorial skills without the advanced math and science courses that are part of the University of Florida's computer science program. In short, our area employers asked for an advanced vocational, workforce-oriented program that would provide them with the level of expertise that the evolved local information technology job market requires: top notch programmers, not theorists or architects.

The concept for a BAS program was presented to the ITE Advisory Committee during its 2013, 2014, and 2015 meetings (Appendix A4-A7) and to the full membership of the GIT in a survey administered February 14, 2013 (Appendix A10). Seventeen local employers responded to the February 2013 survey. All expressed support for having SF develop a new baccalaureate program that would build on the existing AS programs. Eight of the respondents preferred a BAS focused on computer programming while nine desired to have a BAS that would teach both programming and networking skills.

Another survey was administered on April 5, 2013 to determine whether students enrolled in our AS programs in Networking Services Technology or Programming and Analysis would be interested in pursuing the proposed BAS degree at Santa Fe. Seventy-nine students enrolled in Santa Fe's Information Technology Education's AS programs at the time responded to the survey. All but two of them expressed an interest in continuing their education and pursuing a baccalaureate program at Santa Fe College in their area of specialization. Approximately 80% said they did not already possess a baccalaureate degree, and nearly 85% of them said they planned on staying in

Gainesville after earning their AS degree. However, 82% of respondents said they would consider relocating if they could secure better employment in the information technology field (Appendix A11).

Lastly, graduates from the AS programs in Networking Services Technology and Programming and Analysis were surveyed to determine their interest in pursuing the proposed BAS. All twenty four respondents expressed an interest in returning to Santa Fe to pursue their baccalaureate degree, believing that this would help them advance their current job (Appendix A12).

Following some introductory and informal conversations over the course of 2013-2014, Dr. Ed Bonahue and Dr. Vilma Fuentes from Santa Fe College met the Dean and Associate Dean of the University of Florida's College on Engineering, Dr. Cammy Abernathy and Dr. Angela Lindner on April 14, 2014 to discuss the proposed BAS in IST. Both Dr. Abernathy and Dr. Lindner agreed that our proposed program would help fill the large workforce needs in our service district and not compete with the computer engineering program that the University of Florida offers. They further acknowledged that although UF engineering students often complete internships with information technology companies in Gainesville, few remain in the area upon graduation because they are offered more lucrative job opportunities by large, national corporations such as Google and Amazon. After this encouraging meeting, Dr. Bonahue and Dr. Fuentes met with the University of Florida's Associate Provost, Dr. Bernard Mair, on July 31, 2014 to discuss this proposal further. He also did not see a direct competition between the proposed BAS in IST and the undergraduate programs offered at the University of Florida. Letters of support were received from Dr. Cammy Abernathy in April 9, 2015 and UF Provost Joe Glover on May 7, 2015
(Appendices B9 and B10).

4.3 **List engagement activities; this list shall include APPRiSe, meetings, and other forms of communication among institutional leadership regarding evidence of need, demand, and economic impact.**

	Date(s)	Institution	Description of activity
APPRiSe	N/A		
Public universities in college's service district	04/14/2014	University of Florida	Meeting: Dr. Ed Bonahue and Dr. Vilma Fuentes from Santa Fe College met the Dean and Associate Dean of the University of Florida's College on Engineering, Dr.

	07/31/2014 04/09/2015 05/07/2015		Cammy Abernathy and Dr. Angela Lindner Meeting: Dr. Bonahue and Dr. Fuentes also met with the University of Florida's Associate Provost, Dr. Bernard Mair Letter of support: Dr. Cammy Abernathy Letter of support: UF Provost Joe Glover
Regionally accredited institutions in the college's service district	N/A		

ENROLLMENT PROJECTIONS AND FUNDING REQUIREMENTS

5.1 Provide a brief explanation of the sources and amounts of revenue that will be used to start the program.

The proposed BAS in Information Systems Technology will be funded by tuition, Florida College System Program Funds, and student fees.

Tuition

Expected tuition revenue is based on planned student enrollment as outlined in Table A.2 and summarized below.

I. PLANNED STUDENT ENROLLMENT	PROJECTED 2015-16	PROJECTED 2016-17	PROJECTED 2017-18	PROJECTED 2018-19
A. Student Headcount	40	80	120	120
B. Upper Division Student Credit Hours Generated **(Resident)**	360	900	1,500	1,500
Upper Division Student Credit Hours Generated **(Nonresident)**	0	0	0	0
Upper Division Total Student Credit Hours Generated **(Resident and Nonresident)**	360	900	1,500	1,500
C. Upper Division Student FTE (30 Credit Hours) - **(Resident)**	12	30	50	50
Upper Division Student FTE (30 Credit Hours) - **(Nonresident)**				
Upper Division Student FTE (30 Credit Hours) - **(Resident and Nonresident)**	12	30	50	50

College Operating Funds (Florida College System Program Funds)

Existing full-time administrative and faculty members' salary and benefits are currently being covered by the college's existing operating budget. Their salary expenses minus the cost to replace teaching loads with part-time instructors have been identified as revenue from the Florida College System Program Fund. In

essence, these costs are already a component of the College's recurring operating budget.

Other Student Fees

Six of the thirteen courses for this program will be assessed an estimated $50 lab fee for software and other unique course materials and supplies. The estimated revenue to be generated based on planned enrollment has been identified as other student fees.

5.2 Provide a narrative justifying the estimated and projected program enrollments, outcomes, revenues and expenditures as they appear in Appendix Table A.2.

Administrative Costs

The current director of the Information Technology Education Department will oversee the implementation and development of the new BAS in IST. A quarter ($19,723) of his salary and benefits totaling $78,892 will be paid by the proposed BAS budget beginning in the 2015-2016 academic year and the remaining portion will be paid by the existing AS programs in Information Technology Education. The salary and benefits for this administrator have been calculated with a 2% anticipated yearly increase.

Instructional Costs

Full-time, 9-month faculty at Santa Fe College currently teach 30 credit hours (CH) a contract year at an average yearly cost (in this program) of $67,320 (including benefits). In other words, they are paid on average $2,244 ($67,320/30CH) for each credit hour of instruction. Existing full-time Santa Fe faculty members in the Information Technology Education Program will teach 18 credit hours in the proposed BAS during the 2015-2016 academic year, 21 credit hours of upper division courses during the second year of the proposed program, and 42 credit hours per year thereafter (See Appendix E2). The proposed budget plan pays these full time instructors $2,244/CH based on the anticipated course offerings and enrollment projections. Full-time faculty salary/benefits have been calculated with a 2% anticipated yearly increase.

A new full-time, 12-month faculty member with a PhD in an appropriate field will be hired in the Fall 2016. This new faculty member will be required to teach 24 credit hours per year and assume some coordination duties for the proposed program. It is estimated that this new hire will be paid an average of $90,000 (including benefits). This new full-time faculty's salary and benefits have been calculated with a 2% anticipated yearly increase.

Part-time faculty will meet the remaining instructional needs of this new program. The expense per credit hour of instruction for part-time faculty has been budgeted using the existing part-time rate for salary and benefits of the

Information Technology Education Program at $701/CH with a projected increase for 2015-2016 for 2%. In addition, part-time faculty salary and benefits have been calculated with a 2% anticipated yearly increase.

Capital Costs

The College will spend $1,000 a year to continue to enhance its library collection in support of the proposed program. We also anticipate acquiring new software each of the first four years of the proposed BAS program. This cost has been noted as Operating Expenses-Materials/Supplies.

Other Expenses

Other expenses that have been budgeted include minimal funding for student services, library support, and travel.

STUDENT COSTS: TUITION AND FEES

6.1 Anticipated cost for a baccalaureate degree (tuition and fees for lower and upper division credit hours) at the proposing FCS institution (tuition and fees x credit hours).

	Cost per credit hour			Number of credit hours		Total cost
Tuition & Fees for lower division:	$105.47	**X**	Credit hours	84	**=**	$8,859.48
Tuition & Fees for upper division:	$125.33	**X**	Credit hours	39	**=**	$5,537.87*
Tuition & Fees (Total):	$	**X**	Credit hours	123	**=**	$14,397.35

**Includes additional $650 in lab fees ($50 for each of 13 upper-division courses)*

6.2 Estimated cost for a baccalaureate degree (tuition and fees) at each state university in the college's service district.

Institution Name: University of Florida

Tuition & Fees:	$210.33	**X**	Credit hours	120	**=**	$25,240

Institution Name:

Tuition & Fees:	$	**X**	Credit hours	--	**=**	$-,---

6.3 Estimated cost for a baccalaureate degree (tuition and fees) at each nonpublic institution in the college's service district (if available)*

Institution Name:

Tuition & Fees:	$	**X**	Credit hours	--	**=**	$-,---

Institution Name:

Tuition & Fees:	$	**X**	Credit hours	--	**=**	$-,---

Note. *If the institution does not provide the tuition cost per credit hour, please provide the cost information provided on the institution's website.

PROGRAM IMPLEMENTATION TIMELINE

7.1	APPRiSe notice:	N/A
7.2	Board of Trustees approval:	September 17, 2013
7.3	Notice of Intent:	September 18, 2013
7.4	Completed proposal submission:	(Insert Date Here)
7.5	Targeted State Board of Education consideration:	August 26, 2015
7.6	Targeted SACSCOC approval (if applicable):	(Insert Date Here)
7.7	Targeted initial teacher preparation program approval(if applicable):	N/A
7.8	Targeted date upper division courses are to begin:	Spring 2016

FACILIITES AND EQUIPMENT SPECIFIC TO PROGRAM AREA

8.1 Describe the existing facilities and equipment that will be utilized for the program.

The BAS in IST will be delivered in large part online through the college's Open Campus. Santa Fe College's online Open Campus recently completed a successful conversion to the Canvas Learning Management System, providing faculty and students with a state-of-the-art online course delivery system. For those courses deemed more appropriate for a traditional face-to-face format, all SF sites also feature technology-enhanced classrooms to promote active learning and student engagement. In addition, the ITE Department manages seven computer labs with over 100 computer stations that will support on-site instruction for the proposed BAS.

8.2 Describe the new facilities and equipment that will be needed for the program (if applicable).

No additional facilities or equipment needs are anticipated in order to initiate the Information Systems Technology BAS program at Santa Fe College. It is anticipated that instruction will take place completely within existing facilities and using existing equipment. Through time, there will be a need to update and replace current information technology equipment due to age, but the college will be more than able to support these needs.

LIBRARY AND MEDIA SPECIFIC TO PROGRAM AREA

9.1 Describe the existing library and media resources that will be utilized for the program.

To ensure that students enrolled in the BAS for IST will have access to bibliographic holdings equivalent to those supporting similar state college programs, SF's library faculty engaged in a benchmarking assessment process. The Information Systems Technology program at Seminole State College of Florida (SSCF) was found to be similar in demographics and course offerings, so
SSCF was selected as a benchmark. The SSCF library utilizes the same library management system (Aleph) as SF, facilitating parallel comparisons of book collections. Due to the strong technology component of this program, sources were limited to the past five years (2008 to present). Resources for College Libraries online and CHOICE were used as additional sources to gather recommended IST resources. This library benchmark assessment concluded that Santa Fe's print and e-book holdings in the field of IST are comparable to those available at peer institutions and, in many areas, exceed them. In addition, SF's databases enable students to access multiple periodicals, journals, and research support services. All of this demonstrates that the SF library is prepared to support the proposed BAS in IST program (Appendix C).

9.2 Describe the new library and media resources that will be needed for the program (if applicable).

Santa Fe will continue to acquire materials, newer titles and more e-books to support the BASIST curriculum in the future. The library will upgrade and expand holdings with the advice and interested assistance of faculty and director. If SF students need access to materials not available in the SF library holdings, the materials may be available through the Library Borrowing Privileges Agreement at the University of Florida. This agreement allows SF students to conduct research using the largest information resource system in the state of Florida.

ACADEMIC CONTENT

10.1 List the admission requirements for the program.

The BAS in Information Systems Technology is designed to provide a seamless transition to graduates from an AS Information Technology program, be it systems technology, programming or web authoring. It will cover areas necessary to train students in a strategic combination of information technology skills for direct entry as programmers or systems designers and/or managers to serve the local business and communications communities with whom the College has already developed close working relationships.

As is the case with the seven baccalaureate programs already in place at Santa Fe, admission to the BAS in Information Systems Technology will require:

- Admission to SF
- overall GPA of 2.5 on all college coursework as reflected on official college transcripts
- Completion of an Associate of Science Degree in a related area
- The following program prerequisites:
    - MAC1105 College Algebra or higher
    - STA2023 or STA X014 Statistics
    - SPC2608 Public Speaking
    - CET X179, CTS X134, or CTS X2650 Networking Concepts and Operating Systems
    - COP2000 Introduction to Programming
    - CGS2540C Database Management

10.2 What is the estimated percentage of upper division courses in the program that will be taught by faculty with a terminal degree?

Santa Fe College meets the established SACS standards for the associate and baccalaureate faculty credentials - a master's degree with 18 graduate hours in the instructional discipline. Santa Fe has implemented seven baccalaureate programs and is well aware of the SACS requirement that at least 25% of upper division instruction be taught by faculty with terminal degrees.

Santa Fe College's ITE Program currently has seven full-time faculty, five of whom, have graduate degrees in different IT fields. Three of the faculty are completing a doctoral program in information technology. An eighth faculty member with a PhD will be hired beginning the Fall of 2016 to teach in the proposed program. In addition, five full-time faculty with terminal

degrees in the Business Department are available to teach the three business-related courses that have been proposed as part of the upper-division course load.

10.3 What is the anticipated average student/teacher ratio for each of the first three years based on enrollment projections?

Some of the courses in the proposed program will have enrollment capacities of 25 students, while others will be taught in media laboratories with a capacity of 20 students. We anticipate having an incoming class of 20 students in the Spring of 2016 and having the program grow to at least 80 students by the end of its second year. Santa Fe is fortunate to have seven full-time faculty and several part-time faculty available to teach the upper division technical courses in this program. An additional full-time faculty member will begin teaching in the Fall of 2016 if projected enrollment is met. Measured solely by headcount, the 20 students projected to enroll the first year would have access to 7 full-time faculty available for consultation, a program-wide student/teacher ratio of 3:1, not including the many qualified part-time instructors available.

10.4 What is the anticipated SACSCOC accreditation date, if applicable?

In the spring of 2011, Santa Fe College completed the substantive change process required by SACS to be fully accredited as a Level II (baccalaureate-granting) institution, with no further reports required. The College submitted its decennial reaccreditation report to SACS in March of 2012 and hosted a successful onsite reaffirmation visit in late October of 2012. The College received official SACS reaffirmation of reaccreditation in June of 2013 with no further reports required. Within this context, and only after approval by the Florida Board of Education, Santa Fe will submit a Letter of Notification to SACS describing the new program, together with any prospectus that may be required.

10.5 What is the anticipated Florida Department of Education initial teacher preparation approval date, if applicable?
N/A

10.6 What specialized program accreditation will be sought, if applicable?
N/A

10.7 What is the anticipated specialized program accreditation date, if applicable?

N/A

10.8	Are there similar programs listed in the Common Prerequisites Manual for the CIP code (and track, if any) proposed for this program? 11.0103 Information Technology, Track 4/4	X Yes	☐ No

10.9 List the established common prerequisites for this CIP code (and track, if any) as listed in the Common Prerequisites Manual proposed for this program:

MAC 1105, College Algebra (or higher), 3 crs.
STA 2023 (or STAX014), Statistics, 3 crs.
SPC 2608, Public Speaking, 3 crs.
CET X179, CTS X134, or CTS X650, Network Concepts and Operating System, 3 crs.
COP 2000, Introduction to Programming, 3 crs.
CGS 2540C, Database Management, 3 crs.

10.10 Describe any proposed revisions to the established common prerequisites for this CIP (and track, if any).
N/A

10.11 List all courses required once admitted to the baccalaureate program by term, in sequence. For degree programs with concentrations, list courses for each concentration area. Include credit hours per term, and total credits for the program:

The proposed program is an articulated AS-to-BAS program incorporating 63 credits from the lower division into the baccalaureate degree. Since the majority of AS degrees include only 15 credits of general education, all students seeking the BAS in Information Systems Technology will be required to complete the balance of Santa Fe's 36-credit general education core. Demonstration of foreign language competence (through 2 years of sequential study in high school; 8 credits of sequential study at the college level; or attainment of an acceptable score on a standardized test) will also be required.

The upper-division courses will include 30 hours of core Information Systems Technology BAS courses (including a three-hour capstone course), and nine hours of elective courses for a total of 39 upper division courses. In addition, students will have to complete the remaining balance of 21 credit hours of general education course work (and the foreign language requirement, if

needed) in order to complete the degree. The coursework for the proposed program is shown below.

Course Type	Course #	Course Title & Course Description	Credit Hours
Lower Division		AS in Networking Services Technology or AS in Internet Services Technology or AS in Programming and Analysis	63
Additional General Education		Mathematics Course	3
		Humanities Courses	3
		Natural Science Courses	7
		Social Science Course	3
		Research and Analysis Course	3
		Global or Multicultural Course	2
IST Upper Division Common Classes	ISM4480	**Principles of Electronic Commerce** - This course is designed to familiarize the student with the management approach to defining and implementing e-commerce systems. The course addresses the digital economy, e-commerce strategy, marketing, and e-commerce models. The course will cover management and regulatory issues.	3 cr.
	MAN4583	**Project Management** This course covers the fundamental knowledge areas related to successful project management. Topics include project selection and initiation, work breakdown structure and scope management, scheduling, budgeting and cost analysis, quality control, project communication plans, project risk analysis, resource leveling and procurement issues.	3 cr.
	ISM4323	**Information Security Policy Administration** - This course examines managerial aspects	3 cr.

		and policy development of information security. Policy development includes security management planning, risk management, disaster recovery, data security, virus management, and personnel issues. Examples for information security management issues, practices, and applications are presented.	
	CIS4891	**Senior Capstone Project** This capstone course will provide students an opportunity to apply newly acquired normative and cognitive skills in an actual working situation. It should be taken during the last semester at the college. This course provides the student with the opportunity to develop a plan to solve a problem dealing with management and organizational leadership issues of today.	3 cr.
	MAN3025	**Principles in Management & Supervision** - A foundation course of study in management. Process and content of management are analyzed. The course emphasizes classical, human relations, human resources, and behavioral management. The content includes: planning, organizing, leading, control, employment cycle, organizing, organization design and motivation.	3 cr.
	COP3337	**Intermediate Programming (C++)** - A study of the C++ programming language including streams, classes, recursion, template classes and exception. An introduction to data structures is included.	3 cr.

	CET4505	**Computer Operating Systems** - This course is a study of the fundamental concepts, structures and organization of operating systems. It includes the study of processes, threads, multi-tasking, concurrency and deadlocks, memory management and file management.	3 cr.
	ISM3113	**Information Systems Analysis and Design -** This course covers a wide range of topics as they relate to systems design and analysis and software management. Topics include Internet technology, systems management, interface design, programming and the systems development life cycle.	3 cr.
	ISM3220	**Network Management for Information Professionals -** This course provides the student with an understanding of the management of various networking technologies as they relate to managing the business environment. Students will learn the management issues involved in data communications, communication protocols, reporting, and human interactions with networks.	3 cr.
	CTS4408	**Database Administration** - Client-server architecture; planning, installation, server configuration; user management; performance optimization,; backup, restoration; security configuration; replication management; administrative tasks.	3 cr.
Upper Division	CGS4183	**Web Design for E-Commerce** – Introduces the student to the	3 cr.

Elective Credits (only 9 credit hours are required)		concepts and principles of designing software tools used in web applications for electronic commerce. The student will gain hands on experience in developing, manipulating, and implementing web tools for electronic transactions such as a web database and an electronic shopping cart.	
	COP3655	**Application Development for Mobile Devices** - Students will study the most widely used mobile development environments used by businesses. A hands-on environment will be provided by implementing a common solution using multiple development environments and multiple devices.	3 cr.
	COP4813	**Web Applications Programming (enterprise Java)** - This course covers the development of distributed multi-tier, web-based applications using the Java programming language. The use of the current Java Platform and Enterprise Edition (EE) platform will be integral to this process. Key topics include Enterprise Java Beans (EJB), web services, profiles, servlets and Java Server Pages (JSP).	3 cr.
	COP3012	**Advanced C++ Programming (enterprise C++)** - This course explores the concepts of object-oriented programming including abstraction, encapsulation, inheritance and polymorphism. The applications developed will focus on extracting objects from a problem domain and designing solutions based on passing	3 cr.

		messages between objects. Implementation will be done in a current object-oriented language.	
	CNT3504	**Computer Networks and Distributed Processing** – Students will study architectures, protocols, and layers in communication networks and develop client-server applications. Topics include the OSI and TCP/IP models, transmission fundamentals, flow and error control, switching and routing, local and wide area networks, wireless networks and client server models. Students will extend course topics via programming assignments, library assignments and other requirements	3 cr.
	CNT4515	**Wireless Networks and Portable Devices -** Students in this course will study wireless and emerging network technologies. They will examine the effects of mobility on network issues such as architecture, security, privacy, file systems, resource discovery, resource management (including energy usage), personal online identities and other areas. Students will acquire hands-on experience with mobile and sensor platforms.	3 cr.
	CNT4524	**Mobile Security -** This course covers the issues of providing information security for mobile devices in today's corporate environment. As each generation of portable electronic devices and storage media becomes smaller, higher in capacity, and easier to transport, it's becoming	3 cr.

		increasingly difficult to protect the data on these devices while still enabling their productive use in the workplace.	
		Total Credit Hours for the BAS in IST	**123 crs.**

In summary, the requirements for the BAS-Information Systems Technology program are as follows:

AS degree credits	63
Additional General Education	21 credits
IST Upper Division Core Classes	30 credits
Technology Electives	9 credits
Total	**123 credits**

Students who enroll in the proposed BAS in IST full-time will be advised to follow the following course sequence per semester:

YEAR THREE		
First Term		
XXXX	Lower Division Elective (GEN ED)	3
XXXX	Lower Division Elective (GEN ED)	3
MAN3025	Principles in Management & Supervision	3
COP3337	Intermediate Programming	3
ISM3220	Network Management for Information Professionals	3
Total credit hours per term:		15
Second Term		
XXXX	Upper Division Elective (GEN ED)	3
XXXX	Lower Division Elective (GEN ED)	3
MAN4583	Applied Project Management	3
ISM3113	Information Systems Analysis and Design	3
Total credit hours per term:		12
First Year Summer Electives (Only 9 CH of Electives Needed Overall)		
COP3655	Application Development for Mobile Devices	3
COP3012	Advanced C++ Programming	3
CNT3504	Computer Networks and Distributed Processing	3
Total credit hours per term (optional)		9
YEAR FOUR		

Third Term		
XXXX	Upper Division Elective (GEN ED)	3
XXXX	Upper Division Elective (GEN ED)	3
ISM4480	Principles of Electronic Commerce	3
CET4505	Computer Operating Systems	3
Total credit hours per term:		12
Fourth Term		
XXXX	Upper Division Elective (GEN ED)	3
CIS4891	Senior Capstone Project	3
ISM4323	Information Security Policy Administration	3
CTS4408	Database Administration	3
CNT4524	Mobile Security	3
Total credit hours per term:		15
Second Year Summer Electives (Only 9 CH of Elective Needed to Graduate)		
CGS4183	Web Design for E-Commerce	3
COP4813	Web Applications Programming	3
CNT4515	Wireless Networks and Portable Devices	3
Total credit hours per term (optional)		9
Total Upper-Division Credit Hours		39
Total General Education and Foreign Language if needed		21
Total credits carried from Associate's Degree		63
Total credits, Bachelor of Applied Science in Information Systems Technology		123

10.12 Is the program being proposed as a limited access program? (If yes, identify admission requirements and indicate enrollment capacity): ☐ Yes ☒ No

PROGRAM TERMINATION

11.1 Plan of action if program must be terminated, including teach-out alternatives for students.

In the very unlikely event that SF is required to terminate the BAS in Information Systems Technology, all students enrolled in the program at the time of the termination decision will be allowed to complete their degree within a reasonable timeframe. Should it prove more advantageous for the enrolled students, SF will work with other baccalaureate programs to facilitate student transfer. Depending on each individual student's progress and completion of general education, transfer to the other public colleges or universities in Florida may be possible. This transfer should be facilitated by the proposed BAS's curriculum which includes state-defined general education requirements and standard curriculum framework.

Appendix Table A.1.

INSTRUCTIONS FOR COMPLETING THE DEMAND SECTION OF APPENDIX TABLE A.1.1 and A.1.1.2: To complete the following table, use the CIP to Standard Occupational Classification (SOC) crosswalk of the U.S. Department of Education to identify the SOC codes for occupations associated with the proposed program's CIP code. Fill in Table A.1.1 using the employment projections data produced by the Florida Department of Economic Opportunity (DEO), pursuant to Section 445.07, F.S., for the workforce region aligned with the college's service district for each SOC code associated with the proposed program's CIP code. The employment projections data may be accessed at http://www.floridajobs.org/labor-market-information/data-center/statistical-programs/employment-projections. For proposed programs without a listed SOC linkage, identify the appropriate SOC codes for which the program prepares graduates. Insert additional rows as needed. The total job openings column value shall be divided by eight to reflect total annual job openings. The annualized salary shall be calculated by multiplying the average hourly wage times 40, and then multiplying that value times 52. Complete table A.1.1.2 in the same manner as A.1.1 for any additional sources of employment projections. Duplicate Table A.1.1.2 for additional sources as needed.

DEMAND: FLORIDA DEPARTMENT OF ECONOMIC OPPORTUNITY (DEO) EMPLOYMENT PROJECTIONS

A.1.1

Occupation			Number of Jobs				Salary		
Name/Title	SOC Code	County/ Region	Base Year 2014	Projected Year 2022	Level Change	Total Job Openings (divided by 8)	Avg. Hourly Wage	Annualized Salary	Education Level
Computer and Information Systems Managers	11.3021	9	84	95	11	2.63	$58.17	$120,994	Bachelor's
Computer Systems Analysts	15.1121	9	407	453	46	13.25	$38.55	$80,184	Associate
Computer Programmers	15.1131	9	216	230	14	6.75	$28.24	$58,739	Post secondary Vocational
Software Developers, Applications	15.1132	9	607	696	89	17.13	$28.05	$58,344	Associate
Software Developers, Systems Software	15.1133	9	78	107	29	4.38	$46.58	$96,886	Bachelor's

Web Developers	15.1134	9	70	77	7	1.88	$30.49	$63,419	Post secondary Vocational
Database Administrators	15.1141	9	82	101	19	3.75	$32.18	$66,934	Associate
Network and Computer Systems Architects and Admins.	15.1142	9	147	175	28	5.88	$32.69	$67,995	Associate
Computer User Support Specialists	15.1151	9	403	449	46	16.13	$20.30	$42,224	Post secondary Vocational
Computer Network Support Specialists	15.1152	9	81	90	9	3.25	$18.86	$39,228	Post secondary Vocational
Total		9							
					Total	75	$33.41	$69,493	

DEMAND: OTHER ENTITY INDEPENDENT OF THE COLLEGE – (LIST NAME AND ADDRESS OF OTHER ENTITY HERE)

A.1.1.2 Occupation			Number of Jobs				Salary		Education Level
Name/Title	SOC Code	County/ Region	Base Year	Projected Year	Level Change	Total Job Openings	Avg. Hourly Wage	Annualized Salary	
							$--,---	$--,---	
N/A							$--,---	$--,---	
							$--,---	$--,---	
							$--,---	$--,---	
							$--,---	$--,---	
					Total	---	$--,---	$--,---	

INSTRUCTIONS FOR COMPLETING THE SUPPLY SECTION OF APPENDIX TABLE A.1.2: To complete the following table, use the Integrated Postsecondary Education Data System of the National Center for Education Statistics to identify the number of degrees awarded by other regionally accredited postsecondary institutions in the college's service district under the same or related CIP code(s) as the proposed program. The data center is located at http://nces.ed.gov/ipeds/datacenter/. Include degrees awarded for the most recent year available and for the four prior years for each program. If the program has not had degrees awarded for five years or more, add the degrees awarded for the years available, and divide by that number of years, for the average.

SUPPLY: NATIONAL CENTER FOR EDUCATION STATISTICS, INTEGRATED POSTSECONDARY EDUCATION DATA SYSTEM

A.1.2 Program		Number of Degrees Awarded					5-year average or average of years available if less than 5 years
Institution Name	CIP Code	Prior Year 4	Prior Year 3	Prior Year 2	Prior Year 1	Most Recent Year	
University of Florida		0	0	0	0	0	0
						Total	---	---

INSTRUCTIONS FOR COMPLETING THE ESTIMATES OF UNMET NEED SECTION OF APPENDIX TABLE A.1.3: To complete the following table, column A should be derived from Tables A.1.1 and A.1.1.2 and the totals in columns B and C should be derived from Table A.1.2. Input the figures in the "Total" row in Table A.1.1 and A.1.1.2 for total job openings and Table A.1.2 for most recent year and 5-year average (these figures should be same for all sources). The range of estimated unmet need should be derived from 1) subtracting the figure in column B from the figure in column A and 2) subtracting the figure in column C from the figure in column A. Add rows for additional sources as needed.

ESTIMATES OF UNMET NEED

A.1.3

	DEMAND	SUPPLY		RANGE OF ESTIMATED UNMENT NEED	
	(A)	(B)	(C)	(A-B)	(A-C)
	Total Job Openings (divided by 8)	Most Recent Year	5-year average or average of years available if less than 5 years	Difference	Difference
DEO	75	0	0	75	75
Other: (List here)					

Appendix Table A.2

INSTRUCTIONS FOR COMPLETING THE PROJECTED BACCALAUREATE PROGRAM ENROLLMENT SECTION OF APPENDIX TABLE A.2: To complete the following table, enter the projected enrollment information for the first four years of program implementation. Unduplicated headcount enrollment refers to the actual number of students enrolled. Full-time equivalent (FTE) refers to the full-time equivalent of student enrollment.

PROJECTED BACCALAUREATE PROGRAM ENROLLMENT					
		2015-16	2016-17	2017-18	2018-19
A.2.1	Unduplicated headcount enrollment:				
A.2.1.1	Admitted Student Enrollment (First-time)	40	80	120	120
A.2.1.2	Total Admitted Student Enrollment	40	80	120	120
A.2.2	FTE Enrollment:				
A.2.2.1	Program Student Credit Hours (Resident)	360	900	1,500	1,500
A.2.2.2	Program Student Credit Hours (Non-resident)	0	0	0	0
A.2.2.3	Total Program Student Credit Hours	360	900	1,500	1,500
A.2.2.4	Program FTE (30 credits) - (Resident)	12.0	30.0	50.0	50.0
A.2.2.5	Program FTE (30 credits) - (Non-resident)	0.0	0.0	0.0	
A.2.2.6	Total Program FTE	12.0	30.0	50.0	50.0

INSTRUCTIONS FOR COMPLETING THE PROJECTED DEGREES AND WORKFORCE OUTCOMES SECTION OF APPENDIX TABLE A.2: To complete the following table, enter the projected number of degrees awarded, the projected number of graduates employed and the projected average starting salary for program graduates for the first four years of program implementation.

PROJECTED DEGREES AND WORKFORCE OUTCOMES					
		2015-16	2016-17	2017-18	2018-19
A.2.3	Degrees	0	0	40	40
A.2.4	Number Employed	0	0	40	40
A.2.5	Average Starting Salary	$0	$0	$50,000	$51,500

INSTRUCTIONS FOR COMPLETING THE REVENUES AND EXPENDITURES SECTION OF APPENDIX TABLE A.2: To complete the following table, enter the projected program expenditures and revenue sources for the first four years of program implementation.

REVENUES AND EXPENDITURES				
I. PROJECTED PROGRAM EXPENDITURES	2015-16	2016-17	2017-18	2018-19
INSTRUCTIONAL				
1. Faculty Full-Time FTE	0.6	1.5	2.2	2.2
2. Faculty Part-Time FTE	0.0	0.0	0.3	0.3
1. Faculty Full-Time Salaries/Benefits	40,392	138,066	189,861	193,667
2. Faculty Part-Time Salaries/Benefits	0	0	6,659	6,789
3. Faculty Support: Lab Assistants	0	0	0	0
OPERATING EXPENSES				
1. Academic Administration	19,723	20,117	20,520	20,292
2. Materials/Supplies	3,000	12,500	20,500	20,500
3. Travel	500	500	500	500
4. Communication/Technology	0	0	0	0
5. Library Support	0	0	0	0
6. Student Services Support	1,000	1,000	1,000	1,000
7. Professional Services	0	0	0	0
8. Accreditation	0	0	0	0
9. Support Services	0	0	0	0

CAPITAL OUTLAY				
1. Library Resources	1,000	1,000	1,000	1,000
2. Information Technology Equipment	0	0	0	0
3. Other Equipment	0	0	0	0
4. Facilities/Renovation	0	0	0	0
TOTAL PROJECTED PROGRAM EXPENDITURES	$65,615	$173,183	$240,039	$244,387
II. NATURE OF EXPENDITURES				
1. Recurring	65,615	173,184	240,039	244,387
2. Nonrecurring	0	0	0	0
TOTAL	$65,615	$173,184	$240,039	$244,387
III. SOURCES OF FUNDS				
A. REVENUE				
1. Special State Nonrecurring	0	0	0	0
2. Upper Level - Resident Student Tuition Only	33,044	85,086	146,070	150,450
Upper Level - Nonresident Student Fees Only	0	0	0	0
Upper Level - Other Student Fees (Lab Fees)	3,000	12,500	20,500	20,500
3. Contributions or Matching Grants	0	0	0	0
4. Other Grants or Revenues	0	0	0	0
5. Florida College System Program Funds	47,314	52,954	87,528	85,073
6. Unrestricted Fund Balance	0	0	0	0
7. Interest Earnings	0	0	0	0
8. Auxiliary Services	0	0	0	0
9. Federal Funds – Other	0	0	0	0
B. CARRY FORWARD	0	17,743	-4,901	9,158
TOTAL FUNDS AVAILABLE	$83,358	$168,283	$249,197	$265,181
TOTAL UNEXPENDED FUNDS (CARRY FORWARD)	$17,743	-$4,901	$9,158	$20,794

Supplemental Materials B.1

SUPPLEMENTAL MATERIALS

B.1 Summarize any supporting documents included with the proposal, such as meeting minutes, survey results, letters of support, and other supporting artifacts.

Appendix A – Administrator, Faculty and Advisory Board Meetings

A1: Minutes of Santa Fe College District Board of Trustees Meeting September 17, 2013

A2: Letter of Intent for Proposed BAS in Information Systems Technology Accepted by Florida Department of Education on September 18, 2013

A3: Information Technology Education Faculty Meeting Minutes Fall 2013

A4: Information Technology Education Advisory Committee Meeting Minutes, February 15, 2013

A5: Information Technology Education Advisory Committee Meeting Minutes, March 14, 2014

A6: Information Technology Education Advisory Committee Meeting Minutes, February 6, 2015.

A7: Information Technology Education Advisory Committee Members

A8: Gainesville Information Technology Forum Minutes, December 4, 2012

A9: Gainesville Information Technology Forum Minutes, January 31, 2013

A10: Gainesville Information Technology Survey Results, February 2013

A11: Information Technology Student Survey Results, April 2013

A12: Information Technology Graduates Survey Results, April 2013

A13: Common Prerequisites Counseling Manual for the Information Technology Program, CIP code 11.0103 (track 4/4)

A14: Curriculum for the BS in Computer Engineering and BS in Computer Science at the University of Florida

Appendix B – Letter of Support

B1: Letter from Kim Tesch-Vaught, Executive Director, CareerSource, April 23, 2014

B2: Letter from Josh Greenberg, Co-founder and CTO, Grooveshark, March 17, 2015

B3: Letter from David Darus, IT Infrastructure Administration Manager Gainesville Regional Utilities, March 17, 2015

B4: Letter from Ryan Frankel, CTO Digital Brands

B5: Letter from Richard Oyen, Vice President for Human Resources, Sum Total, March 7, 2014

B6: Letter from Ashlei Harris, Human Resources Generalist, Tower Hill Insurance, February 18, 2014

B7: Letter from Chad Paris, Paris Leaf, March 24, 2015

B8: Letter from Thomas Rock, InfoTech, March 20, 2015

B9: Letter from Priscilla Parker, Program Coordinator for Career Pathways, Santa Fe College, May 5, 2015

B10: Letter from Dr. Cammy Abernathy, Dean of the University of Florida College of Engineering, April 9, 2015

B11: Letter from Dr. Joe Glover, Provost, University of Florida College of Engineering, May 7, 2015

Appendix C --Results of Library Benchmarking Process

Appendix D—Workforce Analysis

D1: Florida Department of Economic Opportunity, Labor Market Statistics Center, Employment Projections for Region 9 (2014-2022)

D2: Florida Department of Economic Opportunity, Labor Market Statistics Center, Top 15 Bachelor Level Occupations in Undersupply Using Short-Term Demand Data (June 2014)

	D3: Florida Department of Economic Opportunity, Labor Market Statistics Center, Florida Long Term Jobs in Demand (2014-2022) **D4:** Bachelor's Degrees in Information Technology, Computer Engineering, and Computer Science Awarded by the State University System, 2004-2014
B.2	List any objections or alternative proposal received from other postsecondary institutions for this program. N/A

District Board of Trustees
September 17, 2013

Agenda Item: 2.10

Two New Baccalaureate Programs Letter of Intent:
Bachelor of Applied Science in Information Systems Technologies
Bachelor of Science in Health Informatics and Information Management

Information Item
101.89, 13-14

College faculty and staff have completed preliminary work suggesting significant potential for new baccalaureate programs in Information System Technology, and Health Informatics and Information Management. Using both quantitative workforce data and qualitative input from local employers, early analysis has found evidence of current and sustained need for baccalaureate-trained professionals to work in Gainesville's burgeoning IT sector, as well as in the well-established healthcare sector.

With this preliminary work completed, the attached letter of intent was prepared and submitted to the chancellor indicating the college's intention of embarking on a more exhaustive needs analysis and plan for implementation. Consent and support are requested for proceeding with a full-scale exploration of baccalaureate degree programs in these areas, which will culminate in comprehensive proposals for state submission and board approval.

FLORIDA DEPARTMENT OF EDUCATION

MEMORANDUM

TO: Mr. Frank T. Brogan, Chancellor
State University System

Dr. Ed Moore, President
Independent Colleges and Universities of Florida

Mr. Samuel Ferguson, Executive Director
Commission for Independent Education

FROM: Ms. Abbey Ivey, Director of Academic Affairs

DATE: September 24, 2013

SUBJECT: Letter of Intent from Santa Fe College

The purpose of this correspondence is to inform you the Division of Florida Colleges received a Letter of Intent (LOI) from Santa Fe College on September 18, 2013.

The LOI is attached. The degree proposals being developed by Santa Fe College are:

- Bachelor of Applied Science in Information Systems Technologies
- Bachelor of Science in Health Informatics and Information Management

Section 1007.33, Florida Statutes, requires the Division of Florida Colleges to forward the LOI to the chancellor of the State University System, the president of the Independent Colleges and Universities of Florida and the executive director of the Commission for Independent Education. Please disseminate the information herein to the institutions within your respective systems as appropriate.

RANDALL W. HANNA
CHANCELLOR, THE FLORIDA COLLEGE SYSTEM
325 W. GAINES STREET • TALLAHASSEE, FL 32399-0400 • 850-245-0407 • www.fldoe.org/fcs

If you have questions or concerns, please contact me at 850-245-9492 or Abbey.Ivey@fldoe.org.

AI

Attachment

cc: Ms. Pam Stewart, Commissioner, Florida Department of Education
Mr. Randy Hanna, Chancellor, Division of Florida Colleges (DFC)
Ms. Julie Alexander, Vice Chancellor for Academic and Student Affairs, DFC
Dr. Jan Ignash, Vice Chancellor, Academic and Student Affairs, Board of Governors/State University System
Dr. Elizabeth McAuliffe, Vice President for Research and Policy Analysis, Independent Colleges and Universities of Florida
Ms. Susan Hood, Research Analyst, Commission for Independent Education
Dr. Jackson Sasser, President, Santa Fe College (SFC)
Dr. Vilma Fuentes, Assistant Vice President of Academic Affairs, SFC

SF | SANTA FE COLLEGE
Office of the President

September 16, 2013

Chancellor Randy Hanna
Division of Florida Colleges
Florida Department of Education
325 West Gaines Street, Suite 1544
Tallahassee, FL 32399-0400

Dear Chancellor Hanna:

In accordance with Section 1007.33(5)(a), F.S., as well as 6A-14.095, Florida Administrative Code, please accept this Letter of Intent that Santa Fe College intends to submit applications for two new baccalaureate programs – a Bachelor of Applied Science degree in Information Systems Technologies and a Bachelor of Science in Health Informatics and Information Management to primarily serve Alachua and Bradford Counties.

Information Systems Technology

In consultation with local and regional industry professionals, and in light of workforce trends in our region, Santa Fe College has determined a significant need for a bachelor's degree in Information Systems Technologies that will provide a pathway to meaningful employment beyond the entry level for our A.S. degree and certificate graduates in Programming and Analysis and Networking Services Technologies. Building on a foundation of web programming, application development and digital networks design and management at the A.S. level, a new Information Systems Technologies baccalaureate degree will provide students with advanced technical training and professional managerial and supervisory skills to become decision making professionals in the rapidly expanding transformation of our area into a regional technology hub. The curriculum will include both a leadership core of management and supervision competencies and a specialized core of advanced technical skills branching into different latticed fields of specialization. With the help of a specialized academic adviser, students will be able to customize different study and career paths based on their strengths, interests and future professional plans. In the process, students will collect a series of recognized professional certifications. In addition, students will learn the managerial and entrepreneurial skills to perform at a professional level beyond the entry level, as requested by local employers in numerous forums and conversations, greatly enhancing their opportunities for professional advancement.

The Gainesville and North Central Florida area is rapidly evolving as a major technology hub with many major employers locating their offices here and local startups beginning new technology-based companies. Graduates from this program will be competitive in the information technology job market in positions as Database Administrators, Network and Computer Systems Admins, Software Developers, Computer Systems Analysts, and Computer Programmers, all of which require a bachelor education according to the Department of Labor.

The Florida Department of Economic Opportunity (FDEO), Labor Market Statistics Center reports that there are currently 3,478 jobs for computer specialists in Santa Fe College's service district of Alachua and Bradford Counties (Workforce Region 9) and estimates there will be 81 new job openings per year for computer specialists between 2012 and 2020. These projections include jobs for computer systems analysts, computer programmers, software developers, database administrators, and both network and computer systems administrators.

Our intent to propose this program is based on consultations held during the Spring of 2013 with our Information Technology Education Advisory Committee group and multiple conversations with area employers, represented by the Gainesville Information Technology initiative and led by the local FloridaWorks office and the Gainesville Chamber of Commerce. Responding to the need for programmers and systems designers and administrators expressed in these meetings by our local business partners, a formal survey was administered in March of 2013 among all local stakeholders (employers, students, faculty, and employment agencies) to determine the local need for a new baccalaureate program in information systems technologies. In addition, Santa Fe researched the Department of Labor data to verify the demand for such professionals in Alachua and Bradford counties as well as throughout the state. This research confirmed the need and desirability of offering this program in our service area to complement our A.S. students' training and increase their employability.

Preliminary conversation with Associate Dean Angela Lindner from the University of Florida's College of Engineering indicated agreement that there is likely capacity within the region for both a traditional engineering program with extensive mathematics prerequisites and a program such as the one proposed here, which would focus on applied computer programming skills while providing an educational pathway for A.S. students.

Health Informatics and Information Management

Santa Fe College also intends to propose a Bachelor of Science (B.S.) in Health Informatics and Information Management designed to train individuals in the administrative and operational functions of any healthcare entity that gathers, manages and retrieves data. The program will build directly on Santa Fe's very successful and nationally recognized A.S. degree program in Health Information Technology and Management, and indirectly on the technical degrees from other areas including Business Administration, IT, and Health Sciences. The degree will culminate with a capstone course where students put into practice the theories and principles they have studied in the program. (A number of the core courses envisioned for this degree have already been developed and have been fully implemented within SF's Health Services Administration B.A.S. program.) Students in the proposed program will also have the ability to obtain industry-recognized credentials, making them competitive in the health information job market due to their extensive hands-on training.

The U.S. Bureau of Labor Statistics projects employment in the medical records and health information sector to increase 21% nationwide between 2010 and 2020. Santa Fe's service district is expected to mirror this growth given its regional and statewide leadership in healthcare, medical device manufacturing, insurance, pharmaceuticals, and related areas.

The FDEO has estimated there will be, on average, nine new job openings per year in Medical Records and Health Information Technicians (occupation code 29-2071) in Alachua and Bradford Counties between 2012 and 2020. However, the demand for baccalaureate-trained workers in health informatics and information management is expected to be much greater than what the state's labor statistics reveal. New government healthcare requirements will have a significant impact on the healthcare industry in the Gainesville region, home to the Shands Healthcare System, the Malcolm Randall VA Medical Center, North Florida Regional Medical Center, and over 3000 medical offices. The 2009 Health Information Technology for Economic and Clinical Health (HITECH) Act requires doctors, hospitals, and health care providers to adopt new electronic health record technology to capture and share healthcare data securely in order to improve the quality of patient treatment and reduce overall healthcare costs. Other healthcare initiatives such as the federal government's implementation of a new coding system (ICD-10-CM/PCS) by October 1, 2014 also will require trained workers in health informatics and information management. These employees will be expected to implement the new electronic coding and health record systems, manage the electronic data being exchanged, audit the data, ensure its privacy and security, and utilize it to provide quality treatment.

Recognizing the impact that that these changes will have on our region's vibrant healthcare industry, the U.S. Department of Health and Human Services awarded Santa Fe College a Health Information Technology (HIT) Workforce grant in 2010 so the institution could provide training on the new HITECH requirements. Over 1000 students have received HIT training at Santa Fe as part of this grant, 55 have earned their Associate of Science (AS) degree in Health Information Technology, and 39 have completed a certificate as Medical Coders / Billers. Over two thirds of these AS or certificate graduates have found new employment, and most of the remainder have continued with their education. Santa Fe College anticipates enrolling many of these former students in the proposed new BS in Health Informatics and Information Management as our area continues to prepare for the new federal requirements. Graduates from the proposed program will infuse the workforce with the specialized training needed by healthcare agencies and be competitive for employment in related business as well.

Our intent to propose a new B.S. in Health Informatics and Information Management is based on Department of Labor data as well as consultations with local employers. Both of these suggest that there is a critical need for training and specialists in this field. Santa Fe faculty and administrators met with the Health Information Technology Advisory Council during Fall 2012 and Spring 2013 to discuss the possibility of providing this new BS. In addition, preliminary surveys with Santa Fe students reveal that they that they want to pursue this BS degree. This quantitative and qualitative research has confirmed the need and desirability of offering this program in our service area to complement our existing A.S. students' training and increase their employability.

Preliminary conversations with Dr. Paul Duncan, Malcom and Christine Randall Professor and HSRMP Department Chair, from the University of Florida's College of Health and Human Performance have indicated support for having Santa Fe offer this BS in Health Informatics and Information Management. In fact, Dr. Duncan expressed his belief that this new BS would only help strengthen the existing partnership between our two institutions.

In general terms, Santa Fe is prepared to support both of the proposed programs through a combination of student tuition and reallocation of existing budget resources. The new degrees would build upon existing courses in Santa Fe's Health Information Technologies A.S., Networking Services Technology A.S. and Programming and Analysis A.S. programs. Santa Fe College has the computer labs, equipment, and faculty needed to initiate these programs, as well as the academic support services they may require. It is anticipated that many of the courses offered for these two new BS and BAS degrees would be offered online or in hybrid format. Santa Fe maintains a robust Academic Technologies Department and staff to support such course offerings.

The proposed start date for both of these baccalaureate degrees will be August 2014.

If you have any questions about the BAS in Information Systems Technologies or BS in Health Informatics and Information Management that Santa Fe is proposing, I trust you will let me know. We intend to develop the full applications required for these two baccalaureate programs during the upcoming months and submit them during fall. We will appreciate any guidance from the Division.

Sincerely,

Jackson N. Sasser
President

JNS:tc

Faculty BAS discussions.

March 20, 2013

The ITE B.A.S. proposal steering committee met at 10 am. The group is composed of Prof. Debbie Reid (Programming and Analysis), Prof. Cheryl Calhoun (Networking Services Technology) , Digital Media Technology program coordinator Eric Flagg and ITE program director Jorge Ibanez.

The Director informed the group that we had been approved to move ahead with the research and planning of new BAS degree programs for ITE. Under consideration are a Networking Technology BAS, a Programming and Analysis BAS, and a Graphic Design Technology BAS.

Different options were discussed.
We considered one degree for Programming, a second degree for Networking and a third degree for Graphic Design.

After a brief review of the pros and cons of the different options, we agreed on an ITE degree with two tracks of specialization, Programming and Networking. A separate program for Graphic Design would also be requested. The possibility of integrating Graphic Design as a third track of specialization in the ITE degree was also discussed but put on hold until further discussed with the full Digital Media Technology section faculty.

We discussed the results of the informal survey we conducted among our advisory committee and other local employers. Chief among the results was the fact local employers consider employability skills lacking in the program's recent graduates. They consider more training in soft skills as important, or even more important, than more technology training in an upper division ITE program.

Another important fact gleaned from our survey was that half of the responders asked for a BAS program in Programming and half asked for an upper division program in both Programming and Networking.

At this point we have not conducted a similar survey for the Graphic Design BAS degree yet.

We agreed to recommend to the full faculty in our upcoming Area Meeting that we propose a combined Networking/Programming BAS degree program with specializations in either field, a strong component of employability skills training and crossover training to round up the students' training in IT skills.

It was agreed to hold weekly meetings to expedite the proposal process. A meeting was scheduled for Wednesday 27.

March 22, 2013

Area Meeting
Present: all ITE faculty.

As part of the monthly Area Meeting proceedings, the Program Director informed the faculty that we have been approved to investigate the possibility of offering a B.A.S. degree in Information Technology and a B.A.S. degree in Graphic Design Technology.

The recommendations by the steering committee were described and discussed. There was a lively discussion concerning the soft skills needs expressed by our advisory committee and the focus group of technology companies' representatives.

The role and duties of the Steering Committee as representative of the three departments in the planning process was explained and discussed.

March 28, 2013

The BAS steering committee met and discussed:

1. We will create a second LOI template in Google Drive for the Graphic Design LOI.
2. We will decide on the questions for our student and employers' surveys and have them for Matt Chasteen by Wednesday. Eric mailed everyone the links to the surveys DMT used, to be used as starters.
3. The Student surveys for graphic design will be sent out via GDSA Facebook. We will ask Denise to send out the IT student survey via our listserve.
4. The student survey should go out before the end of the semester.
5. We still need to agree on a name for the IT BAS. We seem to agree we will probably go with Advertising Design for the Graphic Design BAS.
6. Eric will contact the Library for their part in the Graphic Design application, Debbie will contact them for the IT application.

April 2, 2013

The BAS steering committee met April 2, 2013.

Present was Cheryl Calhoun, Eric Flagg, Debbie Reid and Jorge Ibanez.

We revised the questions for the online survey exploring the needs and demand for a BAS program in Information Technology and a BAS program in Graphic Design. We agree in the list of questions and Jorge sent them to Matt Chasteen. He said he will have the surveys ready Monday 8, and will send us the links.

We also agreed to revise the departments' advisory committees member list in preparation for the survey and the upcoming consultation concerning the curriculum.

Eric, Debbie and Cheryl will forward candidates to Jorge, who will contact new candidates.

June 24, 2013

Met with Cheryl and Debbie to discuss the general possible structure for the BAS curriculum.
Considered a flowchart model.
From that one i created a new bare bones one charting the credits at each level, which we will begin populating with courses.
Agreed that we will create a proposed curriculum that we will discuss with our advisory committee in the fall for their input.
Also discussed a closer collaboration with Business for some of the upper division curriculum

August 13, 2013
Met with the full Programming faculty to discuss the draft for the Upper Division curriculum, as well as significant changes to the AS curriculum to accommodate the new Mobile Apps classes.
Assigned review and mapping of industry certifications to regular classes to report to John McNeely.

I. Call to order

Jorge Ibanez called to order the annual meeting of the **Information Technology Education Advisory Committee** at **11:45 AM** on **Friday, February 15, 2013** in **S-29/30**.

II. Roll Call

The following faculty & staff were present:

Blanca Betances
Cheryl Calhoun
Bonita Dewiliby
Elizabeth Drake
Eric Flagg
Jorge Ibanez
Mike Lazin
Wes Lindberg
Allen Luck
James Nichols
Rhonda Peyton
Bruce Russell
Marc Shahboz

Absent: Kelly Cartier, Debbie Reid & Denise Remer

The following Advisory Committee Members were present:

Wylene Aubut, *School Board of Alachua County*
George Canova, *School Board of Clay County*
Travis Chapman, *Studio 601*
Jean Clark, *GRU*
Colin Hostet, *Grooveshark*
Josh Isom, *Trendy Entertainment*
Steve Kozakoff, *University of Florida*
Bryan Lewis, *352 Media Group*
Carlos Morales, *UF & Shands*
Mark Nortz, *James Moore, Co*.
Priscilla Parker, *Santa Fe College*
Nirmal Raisz, *School Board of Alachua County*
Geoff Wilson, *352 Media Group*

Confirmed Attendance but were Absent:
Jay Blackadar, *Renaissance Printing*
Steve Ware, *University of Florida IT*
Mark Wilson, *Meridian Behavioral Health*

III. Director's Report:

Jorge welcomed everyone back for the 2013 Annual Advisory Committee Meeting. He also introduced to the Advisory Committee the new faculty/staff within ITE. In the Networking team, James Nichols is currently the new Interim Networking Instructor for the Spring 2013 semester and on the Graphic Design team, Eric Flagg is currently the new Interim Coordinator for the program.

Jorge opened the meeting by asking everyone to take a minute to introduce themselves. During roundtable everyone stated their names, positions held and places of employment.

Jorge showed a power point presentation on an overview of program developments within the last 12 months. After lunch, everyone convened in break-out groups for faculty to update the Advisory Committee members of their progress.

Jorge asked that all areas present him with notes from their break-out meetings. These notes are listed below.

IV. DMT Area:

The Santa Fe College DMT faculty met with the members of its Industry Advisory Committee to discuss the future direction of the program.

- Introduction to meeting and status of Digital Media Technology program by Eric Flagg. Changes in curriculum, application status of BAS in Multimedia and Video Technology BAS degree were main topics introduced. DMT Faculty were asked to present what current students were interested in adding to DMT curriculum and what the committee saw as important for local DMT needs in the industry. New course design for CGS2823 Advanced Interface Design was introduced. Renaming of DMT to Graphic Design Technology and Digital Media Technology (which will retain the current Multimedia track) All in attendance agreed that a BAS degree in Multimedia/Video technology would be beneficial to local businesses especially since the pool of talent is limited and might help local ad/design agencies expand their abilities to produce locally. It was explained by Eric that students can be limited with an A.S. degree only and their options for a BS, BA, BFA in video is limited as Florida State Universities will not articulate all of their AS credits and also Florida State Universities with a Video Production/Multimedia Bachelors were very limited (UCF and FSU). The other option is private-for-profit sector which costs over $80K for a degree in this field.

- Rhonda Peyton - Students have said they would like to get more training in
  - App Design
  - More Web Design (currently 3 classes in Web Authoring/programming/interface design
  - 3D drawing
  - in addition: students are finishing their AS degree and still wanting to 'go further with their studies, i.e. a certificate or a couple more Digital Media or IST/NST classes

- Carlos Morales – Commented on CGS 2823 and said that it really 'hit home' with him and that it looked like it was on target. Needs of his workforce needs a 'strange' combination of skills, a student who can jump between J-Query, programming, etc. AND design, color, understanding of white space, etc. Carlos suggested that in a perfect world, our students would get more programming experience in the Graphic Design track

- Wes Lindberg – Web classes used to start sooner, but DMT felt that students needed more design concepts first.

- Bryan Lewis – needs for incoming employees (i.e. our DMT students) need to be 'left-brain' and 'right brain' trying to meet in the middle. Strong skills in programming plus good front-end design; but he understands that 2-years is not really a enough time for a full hybridization. A bachelor's degree or another year or two could help.

- Carlos Morales – 'if you're going to a big design/web company, it's ok to be more specialized and compartmentalized, you may not need to know too many different things, but for smaller groups (like his at Shands, which is still a fairly large group) you need a hybrid, programmer and designer. <<<Carlos thinks CGS 2823 is great layout>>> his suggestion either for that class or as a whole with the GD track students' portfolio, students need more examples of designing templates, themes and students need to build several wordpress themes.

- Bryan Lewis – Interns' portfolios need to show more fundamental skills, and not just complete and whole design capabilities.

- Wes Lindberg – Our students use Dreamweaver like a 'hammer' and would still rather 'hand-code' so the comments about our students being stronger in programming (coding) makes sense. Dreamweavers' not as useful to them in school, they might be able to get those skills w/o it being incorporated into a whole semester.

- Bryan Lewis – Bryan has an outline of an 'on the job training' and 'curriculum' he gives new employees/interns. Bryan said he would share this outline document with us. Bryan says that '352' needs students who know how to use 'Fireworks' (software, instead of photoshop) and Carlos agreed.

- Travis Chapman – Studio 601 Takes interns. He feels that video/multimedia students (as interns) should be 'thrown into the work immediately' even if their skill sets are weak in certain areas. He's found they learn quicker this way. In response to the BAS in Multimedia and Video Tech. He thinks the curriculum (to add to what the DMT Multimedia AS students take now) should focus reinforcing basics throughout the program, all classes should have an element of lighting, sound, cinematography, etc. In addition, students would be better served in the industry as 'generalists' rather than specialists. Specializations usually come with on-the-job practice/training. In addition to hands-on production training, students should also be shown 'where they can go' for further resources on the industry, i.e. outside of the class, such as magazines like American Cinematographer, Lynda.com, etc. and also look at current industry leaders in the field and specialization the students like and try to emulate them, but counter that also with knowing 'why you use certain styles' and when, not just 'how'.

- Josh Isom (Observer-potential committee member, not on committee yet) Commented on Trendy's needs: wordpress, html, video, after-effects (software) and compositing. Trendy doesn't need programmers per-se but uses web and video as a communication system for their work. A BAS degree in Multimedia and Video Technology would provide students that they will like to use.

- Bryan Lewis – Students in BAS MAVTECH should learn how to solve problems and how to find new information. The multimedia field is full of change and more advanced BAS students should know how to deal with that change.

- Travis Chapman – he agreed with Bryan's last comment and added specific to Video that students need to understand more about camera/video technology altogether. Their interns typically come from UF Telecomm and the students are often confused by the major differences in types of cameras, when they should be used for what purposes and why you don't use certain cinematography styles in certain situations, not just because it looks cool, you need to know the appropriate camera and style for your content.

- Bryan Lewis – agreed with Travis' last comment and added that GD and MM students need to understand reason and theory behind style and design.

ACTION ITEMS TO TAKE FROM MEETING:

- Look at adding more programming to GD Curriculum and less Dreamweaver.
- More theory and design to GD and MM track, whether through course curriculum our outside of class activities.
- Contact Bryan Lewis to obtain outline of his intern/new employee curriculum and on-the-job training manual
- Send copies of GD track curriculum to Bryan and Carlos as well as Josh at Trendy. Send copy of MM track and proposed course list for the BAS MAVTECH degree to Travis Chapman. Solicit comments from each on current curriculum.
- Wes and Eric look into a workshop on Camera types, formats, etc. for MM students outside of class…'choosing the right camera and exposing the myths of camera technology'

V. IST Area:

The Santa Fe College IST faculty met with members of its Industry Advisory Committee to discuss the future direction of the program.

Most of the discussion focused on the newly revised curriculum with more emphasis on programming, in concert with our conversion to a Programming Technologies department.

- Consensus that industry has diverged into "Front End Developer" and "Back End Developer" specializations. Our new curriculum gives a good introductory exposure to both. However, in order for graduates to gain sufficient expertise in either they would in most cases need to undergo further training, for example by doing a three month internship.
    - Front End Developers require HTML, CSS, and JavaScript.
    - Back End Developers require PHP, ASP, and SQL.
- Consensus that we consider expanding the programming sequence to a three course sequence beyond COP2000 instead of just the current two: For example:
    - First level: Object Oriented 1 (COP2551)
    - Second level: Object Oriented 2 (COP2552) - ASP
    - Third level: PHP
- The space in the program could be created by dropping the Graphics Apps requirement (CGS2527) as this is a minimal need for programmers. What little they do need can be incorporated as modules in other courses.
- Consensus that there is little need for Microsoft Access training and that sufficient database concepts can be taught through an SQL framework. Recommended that we consider changing the DB Management (CGS2540) and SQL Programming (CTS2445) sequence to something like SQL 1 and SQL 2.
- Consensus that some networking literacy is helpful, but that an A+ PC Technician curriculum as in Micro Architecture 1 (CTS1131) is pretty irrelevant. Recommended considering going back to Intro to Networking (CTS2134) to fulfill this objective.
- Consensus that there is no need for Dreamweaver expertise for programmers. Some exposure to WordPress might be helpful, but not enough to justify a full course. Can incorporate a bit as modules in other courses.
- Strong support for Digital Media students to continue taking our Web Authoring 1 class (CGS1820). "Right now designers who also know HTML and CSS are worth their weight in gold."
- Recommended that the new course in Programming for Mobile Devices (COP2654) concentrate on the iOS and Android platforms, not on RIM Blackberry and Windows Mobile 7.
- There was considerable discussion on professional development topics and activities that could be included in Professional Development (CIS2254) or as components of other courses.
    - Exposure to Version Control Management Systems such as GIT and SVN.
    - Exposure to Project Management software such as Agile and Scrum.
    - Exposure to sources of continuing education beyond college: industry news sources, forums, user groups, etc.
    - Involvement in local technology related events.
    - Exposure to the IT entrepreneurial and startup cultures.

VI. NST Area:

The Santa Fe College NST faculty met with the members of its Industry Advisory Committee to discuss the future direction of the program.

- **Curriculum Framework:** We presented new NST Degree program requirements and the new 2013-2014 curriculum frameworks from the State of Florida. In particular, we discussed how the new A.S. Degree framework consists of a core set of classes and certificate "tracks" within the degree. One of the new core objectives includes project management which we don't currently have in our program. We will need to review our curriculum to determine if this necessitates a new course.

    - *Jean: "As a technical person, we don't learn how to do Project management."*

    - *Steve: "It's [Project Management] kind of like an art like programming."*

- **Career Training Path/Curriculum:** Presented the "Credit by Experience" certification equivalencies and the concept of multiple entry and exit points. Asked the advisory committee members their opinions about how current should a student's certifications be to earn college credit.

    - *Steve: "Employer hasn't been concerned with date of certification."*
    - *Jean: "NT4 days -> active directory. Group policies make a huge difference."*
    - *Wylene: "With hiring and expired certifications, gives a baseline."*
    - *Jean: "If someone's passed a certification, they can learn. Someone taking NT4->active directory, expecting them to know active directory."*
    - *Mark: "I really don't care as much about certifications. Can they learn? Are they motivated?"*
    - *Mark: "Some people go into the field for the money but it's not for everyone. Gotta have logical thinking, motivation to do it."*

- Cheryl mentioned and there was consensus that in academia we do not want to assume that a person knows about something because they earned a certification, which is why only certain certifications count towards credit for classes. It is about ensuring they have been exposed to close to the latest technology/best practices.

- Bruce provided an example of NT4->active directory is a major change and thus why Windows Server 2003 and 2008, which the group agreed. The group agreed that when there were major shifts in content of certifications, we should update our credit by experience to ensure students have the newer certifications.

- Conversation shifted to discussing skills students need (people skills, management, troubleshooting, etc).

    - *Steve: "Have students starting or are unsure about going into IT. Survey? Do you really want to be in IT? Would be happy to have someone come shadow me all day!"*
    - *Wylene: "Still have to communicate."*
    - *Nirmal: "What I see a lack of with a lot of new employees, their critical problem solving skills isn't there—they expect textbook. Tell them to do research in that area; they don't know what to do."*
    - *Jean: "Out of box thinking that we do on a daily basis—it's just not there."*

- Topic became about Searching google to go and finding the answer, particularly the correct answer.

    - *Mark: "Mister google is a smart guy."*

- Bruce mentioned about finding answers in google that he would look at the first two answers that would have a little difference about how to solve the problem and he would feel one of them must be a little off and then look at the third and fourth links to learn more about which one is likely off.

    - *Jean: "Formal training says one of these is off. Need that formal training."*
    - *Jean: "Get panel in classes to do mock interviews."*

- **NSF GRANT:** Presented the pending NSF grant and provided the committee with a copy of the summary page. Reviewed the four main objectives for the grant and discussed how advisory committee members might be involved. Cheryl talked about having an Open House for our students

and high school students to be able to come and interact with Advisory Board Members/companies to demo what they are using or use our facilities to teach more to the students and get them engaged.

- Presented an overview of other possible opportunities being discussed including additional grants and the possibility of a B.S. degree to look at being more management in focus for those who are not as technical.

    - *Wylene: "They [students] have to understand there is a progression—installing computers and one over you is doing the 'fun stuff'."*

    - *Steve: "Everyone answers help desk calls. But admins answer far less than help desk techs. Helps everyone stay in touch. Budget and financing fits into program like this."*

    - *Jean: "Not just technical skills but soft skills."*

    - *Jean: "HR changed process. Have to go through application, interview, not just send to her anymore."*

- Cheryl mentioned the new program requirements indicate we should be looking at starting a Project Management class that could cover time management, human resources and budget, etc. There was consensus and were excited about this.

    - *Steve: "One instructor posted a topic every few weeks. At end of the semester, had to have so many initial posts and replies."*

- We discussed how the new moderated discussion was taking place in MicroArchitecture 1.

- **Internship:** Question was posed to the advisory committee... "As employers what skills do they needed from an intern." Discussed the development of an internship host survey to help us better understand would our internship host organizations need from interns. Note: All advisory committee members at the table have hosted NST interns in the past.

- Cheryl mentioned about having an application process for internship class. If a student's resume is not prepared, they would be sent to revise it through Santa Fe's job placement center and need to reapply to take the internship class.

- Discussion changed to what technical skills students should have for internships.

    - *Adding Mac OS as a class or in MicroArchitecture was discussed (recommended by Wylene/Nirmal).*

    - *Wylene: "Familiar with OS 10, troubleshooting skills and hardware repair."*

    - *Jean: "Hardware repair on Mac is different on PC –specialty screwdriver. First thing on Mac—setup right click."*

    - *Nirmal: "OS X manage centrally."*

    - *Steve: "Any mobile devices – tablets and iPads?"*

    - *Jean: "Bring your own device to work and making security for your own network."*

    - *Nirmal: "State really pushing to bring your own device."*

    - *Steve: "wants interns for 1 day a week for 4 hours doing remote management/hands-on/answer phones."*

- **Hiring new NST Adjunct Faculty:** Cheryl encouraging advisory members or those they know to consider becoming an adjunct faculty or guest lecturer. With the NSF grant providing full-time faculty with release time for curriculum development, we will need additional adjunct faculty to meet existing capacity in the fall. Need to bring new faculty in with experience and will provide professional development opportunities. Other opportunities include, moving into I building into the fall. Looking into building completely virtual classroom—site for cybersecurity.

- Cheryl also mentioned about the possibility of hosting a VMWare workshop this summer and becoming a VMWare authorized center. The workshop will be hosted in collaboration with Moraine Valley Community College (CSSIA) and CyberWatch . They are funded by NSF and will also provide support in developing our Netlab virtual classroom environment.

    - *Steve: "Citrix shop. UF on cusp of _____ and Desktop. Have virtualized Desktops."*

VII. <u>Adjournment:</u>

Jorge Ibanez adjourned the meeting at **1:45 PM**.

Minutes submitted by: Cheryl Calhoun, Eric Flagg, Mike Lazin and Blanca Betances

Minutes approved by: Jorge Ibanez

Attendance:

SF Faculty	SF Administration & Staff	Advisory Committee Members and Guests	Company
Calhoun, Cheryl	Betances, Blanca	Baer, Jeannette	Frankel Media Group
Drake, Elizabeth	Flagg, Eric	Brady, Mackenzie	Mindtree
Lazin, Michael	Gammons, Rodney	Cohen, Daniel	Mobiquity
Lindberg, Wes	Ibanez, Jorge	Darus, David	GRU
Nichols, James		Dixon, Aaron	352 Media
Peyton, Rhonda		Drake, Anton	O & P Technologies
Reid, Debbie		Frankel, Ryan	Digital Brands
Russell, Bruce		Guidry, Paul	Info Tech
		Head, DJ	Two-Head Video
Absent:	Absent:	Head, Mary Beth	Two-Head Vido
Marc Shahboz	Cartier, Kelly	Hoover, Jeff	Info Tech
	Luck, Allen	Hostert, Colin	Grooveshark
		Kozakoff, Steven	University of Florida
		Lloyd-Santos, Adrian	Grooveshark
		McLeod, Blake	352 Media
		Nestor, Sue	UF Health Shands
		Nortz, Mark	James Moore, Co.
		Paris, Chad	Parisleaf
		Sanders, Patrick	Parisleaf
		Smith, Martin	Rackspace Hosting
		Stevens, Jeff	UF Health
		Tatum, Andrew	O & P Technologies

I. Call to order

Jorge Ibanez called to order the Annual Advisory Committee Meeting of the **Information Technology Education** area at **11:15 AM** on **Friday, March 14, 2014** in **DB-125**.

II. Director's Report:

Jorge opened the meeting by welcoming everyone.

Jorge introduced to the roundtable faculty, staff and the new ITE Advisor.

Jorge presented a report on most recent program developments and projects based on last year's Advisory Committee recommendations. The latest developments concerning the IST BAS Proposal were also presented. Jorge asked the Advisory Committee members to share their opinions with faculty during the breakout sessions, following his presentation.

III. Digital Media & Graphic Design Technology Minutes

1. Welcome – Introductions
2. Rhonda requests that group be split between 'Print' and 'Multimedia' committee members and staff; DJ Head requests that we stay together as their production company is needing to rely more and more on the graphic design side of production for graphics, animation, etc. with their projects so he was interested in the 'big picture'

PATRICK – based on his experience with our interns (they have had at least 2 this year) he felt there was some skill-sets lacking in how graphic design applies to web/video. One intern had a very focused skillset and he would like to see students understand how a brand or trend applies across the board – print, web, app, video

JEANEATTE – technology has changed and print has to be applied to digital applications more and more. This is the case at Frankel

PATRICK - SF students based on what curriculum shows on paper and their experience with our interns, "Conceptualization" is missing and very important, however, technical skills are very good.

RHONDA – Rhonda noted that conceptualization is covered in Advanced Advertising Graphics

JEANETTE – As a firm, they want to know that our students are learning 'web' applications and cross-platform applications of design

DJ – Can you incorporate motion driven software for GD students – to at least understand the language and fundamentals? Such as Frame Rates.

RHONDA – We can work on collaboration between the two tracks, have in the past as well, possibly bring an animation project into GD Photoshop course, similar to the MM students when they take Photoshop II.

DJ – Creative Cloud now allows photoshop to do animation (maybe it did before as well).

PATRICK – (returning to idea of conceptualization) most important thing you own as a designer is a strong idea. How do you put that idea into action visually (he likes our interns) One thing Patrick likes about our interns over 'other interns' not from SF GD, our students usually have a 'different life' before studying GD. UF students are 'idea elitists'. Great with ideas but not necessarily works skills. Not great team players like our students. "Santa Fe graphic design students 'owned it' and worked as a team. I think your strengths are in teamwork and if you strengthen communication and idea generation, you've nailed it."

MARYBETH – "Where is collaboration in the curriculum (everywhere) and where is practical application? What do you teach for students to understand how to 'get a look' in their work (this applies to multimedia). I think a great project would be to come at students with a problem a client comes to you with, ex: 'here's what I think I want' and have your students compete with a pitch for putting the project together. A strong pitch will include a 'creative idea' in the pitch, not just a cost-analysis, day rate, camera types, etc. Two-head has had great success with RFPs because we put a creative idea ahead before being picked to do the project.

RHONDA – "I explain the creative pitch process in-class"

JEANETTE – Use whiteboard to present idea conceptualization. It teaches students 'how to talk'

RHONDA – explained how she teaches the students how to come up with concepts, approaches to creative process

DJ – students should also learn about 'playing nice' with everyone. Learn how to understand where other people are coming from

PATRICK – agrees, a group collective adds to a concept

RHONDA – all students use other people to do critiques and incorporate those critiques into their work, the critique itself is collaborative, not just 'what you do/don't like this, also includes 'why' and gives suggestion.

MARYBETH – fundamental skills do come from 'copying work' to learn a style. Don't serve up students a 'project idea' but also 'what to ask'. (This is more of a response related to MM, but was in response to Rhonda mentioning she doesn't like the Illustration project our students do where they 'copy' other illustrated works (bugs bunny)

DJ - back to the project idea about presenting the students with a client 'problem'. Maybe create a 'form sheet' for what to ask a client.

ERIC – in a sense we need to teach students how to distill ambiguity

PATRICK – there is an art to asking a client what they need. Students need to know when and how to challenge a client's idea or what client thinks they need, and the proper way to present that, not, "You don't know what you're talking about, I'm the designer"

JEANETTE – Everyone who designs at Frankel is given a client brief before they do any work

DJ – "10 commandments" of process/client relations should be on the wall in every class

MARYBETH – In the production world, when you shake hands with a potential client, you're only as good as your last credits. They should be recent.

JEANETTE – She is 'over' the internship program at Frankel, now they have 5-7 interns. All come in timid and stay timid. They need to open up and know how to behave in the work atmosphere.

PATRICK – Stressed teaching 'how do concepts look across multiple digital platforms'. Patrick offered to come in to class to do presentations on professional process, etc.

RHONDA – suggested the idea of Photoshop I class expanding it into other classes and work with video students

PATRICK – 'can you do a continuing project like a campaign that gets passed on to other classes?'

JEFF – I think interactive interface is important to your students, design and coding and not necessarily HTML5 and CSS

PATRICK – "Can you host real client pitches at your campus, 3rd floor? So Students can observe?"

SUMMARY :

- Continue exploring how design is presented across multiple platforms
- Work on idea generation/conceptualization
- Think about collaboration between MM and GD students to introduce multiple platform dynamics. i.e. Video students can show GD students how key-frame-able software works with images and GD students can show MM students more web application of their video
- Work on professional 'behavior' in the workplace.
- For video – Present a client problem/pitch

Overall, based on our committees experience with our interns, they are great to work with, have the technical skills they need, are great team players but could improve on idea generation and in some cases a broader understanding of design as applied to multiple digital platforms.

IV. Networking Technologies Minutes

During the NST breakout portion of the meeting we discussed the changes to the NST curriculum, industry certification, focus on female recruitment efforts and the B.A.S. program. Advisory Committee members were generally my supported of all changes and proposed changes.

Recommendations and comments include:
Need more virtualization, systems architecture, and data structures in our curriculum.
Industry certifications are again very important, demand had dropped off for a few years, but employers are now requiring them for hiring and advancement.
They liked the new tracks that allowed students to specialize.
They again expressed a need for soft skills. Some committee members indicated they would be willing to host single day shadowing events.

V. Programming & Analysis Minutes:

Feedback on BAS Proposal

- Consensus that for many positions two years is not enough, and that in some cases two years of training puts students "into an internship position." They are looking for candidates who can enter and be "up-and-running."
- General approval of our proposed curriculum. However, some opinions that it could include fewer theoretical subjects and more applied topics such as data structures.

Relevance of Industry Certifications

- Most do not require certifications for employment.
- Some value certifications such as Microsoft Developer or MongoDB in special cases.
- Some place high emphasis on certifications such as Scrum, not as a condition of hire but as a "must get" after hire. However, candidates who already have such certifications are "a step above" those who do not.
- No interest in CIW certifications whatsoever.

Incorporating Curriculum Frameworks into Our Program

- Very negligible need for networking knowledge and what little there is could be incorporated into other courses.
- Also very negligible need for graphics expertise, but we should include design principles as much as possible in relevant courses.
- Do not see a need for a project management course at the two-year level. However, exposure to project management software and version control systems should be incorporated into software development courses.

Open Discussion on Any Topics of Concern

- Consensus that we focus on "more depth than width."
- Also focus on tools that are practical.
- Include portfolio development in capstone courses.
- Test driven development or "unit testing" methods should be included in programming classes.
- Database performance or "database tuning" activities should be included in the database curriculum.
- Employers want to see evidence of passion for this field in job candidates beyond just what they are required to do for their courses. This can be expressed in various ways, such as keeping up with the latest technologies online through Reddit communities or by participating in tech events such as hackathons. It was suggested that we find ways to expose our students to these resources and activities, for example through our professional development course.

Minutes submitted by: Cheryl Calhoun, Eric Flagg & Mike Lazin

Minutes approved by: Jorge Ibanez

Information Technology Education Program
Advisory Committee Luncheon and Meeting
Friday, February 06, 2015, noon – 2pm

Present:
ITE Faculty:
Liz Drake, Mike Lazin, Debbie Reid, Cheryl Calhoun, Wes Lindberg, James Nichols, Mari Jayne Frederick

ITE members:
Jorge Ibanez, Blanca Betances, Kelly Carter, Allen Luck, Rodney Gammons

Advisory Committee Members and Prospective Members:
John Chapman, Priscilla Parker, Carlos Morales, Wendy Hoffer, David Darus, Blake McLeod, Jeff Hoover, Scott Feigelis, Nancy Iafrate

The Santa Fe ITE faculty met with the members of its Industry Advisory Committee along with other area IT specialists to discuss the future direction of the program.

Jorge welcomed the Advisory Committee members and presented a brief recap of developments in the program during the last year including an update on the BAS program proposal presented to the Committee last Spring. They were informed the proposal had been put on hold due to a statewide, one year moratorium on all new BAS proposals. The moratorium may be lifted later this spring and it was agreed Jorge would notify all members immediately when/if that happened.

Prof. Drake presented a proposal for a new AS degree program to be offered by ITE. The new Computer Information Technology AS program would target candidates interested in the field of information technology that are more interested in support roles rather than advanced programming or networking positions. It would include courses from both departments and could be used as a crosswalk between both current AS degrees.

The group then moved to the break out sessions to discuss NST or P&A specific subjects.

The groups discussed the first year experience with the new NST curriculum (including the wrapping up of the NSF cybersecurity grant), the revision of the P&A program going from two tracks back to one with a more pronounced emphasis on programming over web design, the new CIT degree proposal, and new classes being added to the P&A curriculum.

Title	First Name	Last name	Job Title	Company	Address	City, St, Zip	Committee	Dept.	Director	Program	NRD
Mr.	Jay	Blackadar	Manager, Graphic Design Department	Renaissance Printing	4130 NW 16th Boulevard	Gainesville, FL 32605	Information Technology Education	DM	Ed Bonahue	Graphic Design Technology	R
Ms.	Priscilla	Parker	Career Pathways Coordinator	SF Career Pathways	Building K-230 Campus	Gainesville, FL 32606	Information Technology Education	P&A	Ed Bonahue	Information Technology Education	R
Mr.	George	Canova			5346 NW CR 229	Starke, FL 32091	Information Technology Education	P&A	Ed Bonahue	Information Technology Education	R
Mr.	Geoff	Wilson	CEO	352 Media Group	422 SW 140th Terrace	Newberry, FL 32669	Information Technology Education		Ed Bonahue	Information Technology Education	N
Mr.	Steve	Kozakoff	IT Director, UF Student Health	UF Student Health Care Center Attn: Steve Kozakoff	1 Fletcher Drive	Gainesville, FL 32610	Information Technology Education		Ed Bonahue	Information Technology Education	R
Mr.	Chris	Meyers	Systems Analyst and ISC Manager	James Moore & Company, P.L.	5931 NW 1st Place	Gainesville, FL 32607	Information Technology Education		Ed Bonahue	Information Technology Education	R
Ms.	Sue	Nestor	Associate Director, Customer Support	UF & Shands / IT	Post Office Box 100356	Gainesville, FL 32610	Information Technology Education		Ed Bonahue	Information Technology Education	R
Mr.	Bryan	Lewis	Interactive Designer	352 Media Group	422 SW 140th Terrace	Newberry, FL 32669	Information Technology Education	DM	Ed Bonahue	Information Technology Education	N
Mr.	Carlos	Morales	Web Services	UF and Shands		Gainesville, FL 32601	Information Technology Education	DM	Ed Bonahue	Information Technology Education	N
Mr.	Josh	Greenberg		Grooveshark	201 SE 2nd Ave. #211	Gainesville, FL 32601	Information Technology Education	P&A	Ed Bonahue	Information Technology Education	N
Mr.	Travis	Chapman	Creative Director	Studio 601	901 NW 8 Ave., A5	Gainesville, FL 32601	Information Technology Education	DM	Ed Bonahue	Information Technology Education	N
Mrs.	Nancy	Iafrate	Career & Technical Ed.	School Board of Alachua Co.	620 East Univ. Ave.	Gainesville, FL 32601	Information Technology Education		Ed Bonahue	Information Technology Education	N
Mr.	Patrick	Sanders	Creative, Developer	Parisleaf	3302 W.Univ.Ave. #B	Gainesville, FL 32607	Information Technology Education		Ed Bonahue	Information Technology Education	N

Mrs.	~~Maria~~	~~Carter~~	Web developer and project manager	Parisleaf	3302 W.Univ.Ave. #B	Gainesville, FL 32607	Information Technology Education		Ed Bonahue	Information Technology Education	N
Mr.	Chad	Parisleaf	CEO	Parisleaf	3302 W.Univ.Ave. #B	Gainesville, FL 32607	Information Technology Education		Ed Bonahue	Information Technology Education	N
Mrs.	Channing	Casey	Vice President, Operations	Frankel Media	105 SW 128 St., #200	Newberry, FL 32669	Information Technology Education	DM	Ed Bonahue	Information Technology Education	N
Mr.	Colin	Hostet		Grooveshark	201 SE 2nd Avenue Suite 211	Gainesville, FL 32601	Information Technology Education		Ed Bonahue	Information Technology Education	N
Mr.	Brandon	Labonte	Executive Recruiter	Info Tech, Inc.	5700 SW 34th St. #1235	Gainesville, FL 32608	Information Technology Education		Ed Bonahue	Information Technology Education	N
Mr.	Ryan	Frankel	CTO	Digital Brands Inc.	15 SE 1st Ave. #B	Gainesville, FL 32601	Information Technology Education	P&A	Ed Bonahue	Information Technology Education	N
Mr.	Jeff	Hoover	IT Director	Info Tech, Inc.	5700 SW 34th St. #1235	Gainesville, FL 32608	Information Technology Education	P&A	Ed Bonahue	Information Technology Education	N
Mr.	Martin B.	Smith	Systems Administrator	University of Florida IT-CNS	University of Florida, 112 SSRB	Gainesville, FL 32611	Information Technology Education		Ed Bonahue	Information Technology Education	N
Mr.	David	Darius	IT Infrastructure & Administration Manager	Gainesville Regional Utilities	4747 N Main St.	Gainesville, FL 32601	Information Technology Education		Ed Bonahue	Information Technology Education	N

Summarization of IT Forum I

I. Overlapping Themes Regarding IT Companies' Concerns and Needs

a. Recruitment Outside of Gainesville & Retention
   i. How to attract IT talent to and retain IT talent in Gainesville, FL
   ii. How to recruit higher level IT talent
b. Recruitment Within Gainesville
   i. How to find trained talent locally
   ii. How to grow talent locally
c. Collaboration
   i. How to increase communication amongst companies, training providers and other business entities to sustain IT growth in town
   ii. A community forum is needed in order to gauge how many companies are struggling with the same problems and how to work towards a common solution
   iii. Gainesville is becoming a technology hub; therefore, it is essential to have one voice
d. Cross over talents, converge technologies & CISCO certifications

II. Educators' Priorities

a. Listen to feedback and company needs
b. Learn how to improve curriculum
c. Learn how to better serve companies
d. Brainstorm how to increase talent placement
e. Increase training opportunities
f. Strengthen relationships with HR Department through collaboration and partnership
g. Identify grant and project opportunities and build momentum to attain them

III. Compilation of Ideas and Suggestions to Minimize IT Skills Gap

Challenge: Recruitment to Gainesville is difficult and retention rates are low
Ideas/Suggestions:

- Collaborate with Chamber to create and disseminate marketing materials promoting Gainesville's coolness factors
- Collaborate with FW, CEO and other companies to create national ads
- Host a big IT recruitment/collision event and invite candidates nationally
- Create a community incentive to move to Gainesville, such as package apartment complexes and more
- Get an ambassador: Augi has stated in the past, "He can make an IT candidate a raving fan of Gainesville within a half-hour conversation".
- Potential resource: GainesvilleConnect.com, a website used to showcase Gainesville, so employers can direct potential candidates to the site when recruiting nationally
- Dr. Gader stated that UF's ACM Graduate group is currently the number one group of programmers in North America

    - They do contests all the time and would be willing to set up a contest using the same format that they use with High School Students
- Create a competitive event using a white board for IT job seekers to work in teams to problem solve a bad programming code. This event would help identify entrepreneurial IT talent who think outside of the box.
- Making working off-site or remotely from another city an option to recruits who do not want to move to Gainesville. A common fear of new recruits is that they will not be able to find a job in Gainesville, if primary job falls through.
    - Idea/Suggestion: Market and communicate more IT jobs as a community; direct traffic to FW's Tech Jobs and encourage more IT companies to post jobs with FW.

Challenge: Applicants who do not fit company needs and/or culture continuously re-apply
Ideas/Suggestions:
- Increase awareness of FW and its programs & services; Use marketing materials to refer these candidates to FW, so FW can help place those candidates with other companies

Challenge: High disparity between college curriculum and real world needs & there is not a lot of diversity between candidates who have Masters compared to Bachelors, even though companies have a lot of candidates with Masters apply
Ideas/Suggestions:
- There is Java curriculum available at UF.
- UF is reintroducing C++, C-Sharp, Enterprise Java, and Enterprise C++ program language to curriculum.
- Santa Fe has C-Sharp and C++ curriculum.
- Info Tech incorporates an agile system in the workplace. They would like to take their professional developers and have them teach class in the community and mentor other IT candidates. Suggestion – each company teach a class, such as:
    - Monday night at Info Tech
    - Tuesday night at Infinite Energy
    - Wednesday night at 352Media

Challenge: Competitiveness – there is a competitive spirit because talent is so few.
Ideas/Suggestions:
- There can be competition among the regions within the state, but the Gainesville community must work together. Collaboration and communication is the only key to success.
- Work with Chamber to keep talent from leaving.

Challenge: Funding - it is too expensive to help train prospective candidates
Ideas/Suggestions:
- Learn how to train talent using available QRT and QTI funding
- Utilize the business community to pursue bigger and more grant opportunities
- Communicate needs with FW, so FW can pursue more funding for training

Challenge: Training providers – it is difficult to place older IT workers. Employers – older workers have outdated training certifications, which they cannot validate with more recent experience; and older workers lack the desire to make a change.
Ideas/Suggestions:
- Training providers need to communicate the benefits of change
- Re-educate, re-train and re-certify older workers
- Create a pool of employers committed to higher older workers who are willing to go through re-certification
- Obtain more grants to help fund older workers who desire to return to school

Challenge: Lack of experience – it is easy to find entry-level candidates because Gainesville is a college town; however, it is hard to find experienced talent who are US citizens.
Ideas/Suggestions:
- More companies should look into H1B options because UF brings in a lot of international diversity; however, most companies do not support H1B visa candidates.
- Apprenticeship – *see enclosed documents for more information. Information presented by William Lauver, Florida Department of Education – Apprenticeship*
    - Suggestion to engage region with pilot IT apprenticeship and possibly model Region 9 after theirs.

Challenge: Difficulty finding self-taught candidates. Can't teach characteristics, but can teach skills.
Idea/Suggestion: James at 352Media ask candidates: What are you doing to use the technology that was born 3-months ago?; Are you hacking your Xbox? What are you doing today to be relevant in the IT industry?

Challenge: Lack of soft skills in IT applicants
Idea/Suggestion: Use personality assessments to pre-screen

Other Challenges:
- Salary
- Southeast is a black hole for Microsoft training

January 31, 2013

Notes from IT Forum II

- **Attendees:** Brandon LaBonte; Jacquie McDonald; Virginia Roberts; David Darus; Susan Scannella; Richard Oyen; Kevin Kochert ; Samuel Saks; Aaron Machado; Uma Shankar; Nancy Ifrate; Joan Suchorski; Jorge Ibanez; Ryan Wilkerson; Ian Fletcher; Arelis Rosario-Roldan; Shareen Baptiste; Joe Johnson; Ted Gilson; Ed Blue; Staci Bertrand; Brenda Chrisman; Robyne Fraize; Makaya McKnight; Lance Armstrong; Kurt Moraurer; Christy Reddish; Kim Tesch-Vaught; Angela Pate; Millard Pate; and R. Bartia
- **Introductions:**
    - The group hopes to gain the following out of this forum and more…
        - Gather the real needs of the business community
        - Individual/employer is new to the area and would love to learn more about this community
        - Would like to exceed in the IT-industry. Gain a deeper understanding of the community's needs, bring those requirements to the executives, move forward in a unified direction, allocate resources and gain a level of acceptance
        - Looking forward to forging partnerships to fill gaps in the community and help prep the workforce so they are ready to go once an employer calls
        - How community partners can help facilitate their growth
        - Understand the needs regarding IT talent
        - How to fill upper level positions and identifying skills needed in the real world
        - Positions are hard to fill and the national job competition is making it hard to fill jobs
        - What are our training needs to help build, develop and have Gainesville be recognized as the next Silicon Valley
        - Better understand training needs
        - What curriculum changes can be implemented to help facilitate employer needs
        - Difficult competing due to salary disparity
- **Words from the Facilitator:** We need to focus on the citizens of Alachua County in order to find and create talent, rather than recruit talent outside of the city. We should make sure that every stone is turned over when searching for local talent. There should be increased outreach and collaboration within the community in order to find talent, such as working with Santa Fe College, FloridaWorks and CONNECT. Some additional ideas: We should start in the middle school and high schools in Alachua County to get those students interested in STEM jobs. Companies should work with Santa Fe College in order to create programs for the youth. We should also work with the school board to add IT-related courses into the curriculum.
- **Discussion:**

- **Question to Group:** What are the resources that you need to allocate help fill your needs? Do you want to recruit outside or grow IT talent within Gainesville?
  - **Group Response(s):**
  - We need to start recruiting at high school level by going to students, advisors and parents to let them know of which industries we are in need of, such as IT and their associated industry wage and promoting more STEM-related occupations.
  - Gainesville needs to foster a program that emphasizes and focuses on the youth. Each company would have to think about what technologies it is using, what technologies the company is using moving forward and what contributions it can make to help incite enthusiasm among the youth, such as helping set up training facilities, developing IT clubs, and donating hard ware to school and youth programs. It would drive excitement about the IT industry. In 2010, there was a forecast that the IT industry is suppose to grow 50% in the next 10 years.
  - However, IT changes so fast and to implement and promote open source products to young kids would not be beneficial. Young kids would need to have the infrastructure and utilize knowledge for real world application.
  - Bradford Union has integrated IT into middle schools. It is progressing and is projected to double. Also discussed IT courses and programs taught at the facilities. The courses are cheaper, financial aid is available and companies can work with representatives from the Bradford Union Vo-Tech.
  - However, IT companies' needs are current. We do need to recruit and appeal talent from outside. We would need to create and implement a community-wide marketing campaign.
  - We do have training facilities to facilitate immediate educational needs and can move quickly with technology changes.
- **Question to Group:** High-level thinking - what are your companies' needs for next 5 years and what is the best strategy to implement, without worrying about proprietary information of companies because the basic software is the same?
  - **Group response(s):**
  - Key word is engagement. Education and experience needs to be married. Because the training is not there, you spend a lot of money training that individual and then he/she gets hired away. Generally speaking, Santa Fe students get a well-rounded IT education, whereas UF students learn more theory.
  - There has not been a salary increases in years, so pay is not competitive. Salary: GRU has only been able to attract other IT professionals from the government sector locally. That is the only way GRU can compete salary wise. Entry levels are

looking to get paid at the top of the salary tiers than workers at GRU. Therefore, it is difficult to recruit and fill mid- to senior-level IT/Engineering positions. If you increase salary, then you will attract the talent. Some entry level would be willing to telecommute but the salary would need to be higher.
        - Training, work environment and new technologies are other appealing factors other than salary. Simply posting jobs will only reach 20% of talent. We need to approach talent directly whose skill sets match.
        - Some staffing companies can work towards finding contracted workers. However, most companies are only full-time, instead of contract work.
    - **Question to Group:** What about senior displaced workers? They are loyal – willing to stay with the company, reliable, experienced in the field, highly skilled and are willing to be trained.
        - **Group Response(s):** However, their skills set are not current. They are unemployed and cannot afford training. A solution needs to mention how to train these displaced professionals.
        - FloridaWorks can put together a pilot project before the end of June where it would allocate funds towards training IT professionals. Which employers will participate in this pilot? Employers would need to specifically work with FloridaWorks to communicate specific needs and consider the out of work professionals in EFM.
    - **Question to Group:** Are there are no technology-focused programs for high school students? There are none at the magnet level.
        - **Group Response(s):**
        - There are high school programs that offer some type of technology program, but they are geared more towards the design aspect. School Board of Alachua County is having difficulty gathering interest in IT programming in middle and high school students; School Board of Alachua County is working with Kim to go after grant to create an IT program in Howard Bishop Middle School.
    - **Question to Group:** What about having internships over the summer?
        - **Group Response(s):** Infotech has an internship program for 15-18 years old over the summer. Infotech would be willing to share information.
    - **Question to Group:** What are we doing with the applicants who are rejected?
        - **Group Response(s):**
        - We can place a link in rejection letter referring them to training sites and FloridaWorks.
        - We will implement monthly Applicant Swap: IT Employer Luncheons, to swap resumes of applicants who were not a fit with one company with another company in which this

applicant might be a match. Focus on working together and less competition within the community, making Gainesville more competitive nationally.

- **General Group Comment(s):**
    - Companies need to create short, mid and long-term goals for talent. For example: short-term – use current and available resources to fill open positions /mid-term – put together a plan for the future. Possibly use a liberal arts student to put together a community outreach plan / long-term – work with the youth (from middle school to the beginning of college career).
    - We need better bandwidth and infrastructure. Alachua county website to work with Kevin Kochert.
    - Companies have immediate needs now. The answer is not all in the training. Companies have to get out there to talk to people to find out if they are happy with where they are. Employers get caught in day-to-day activities. Gainesville is an incubator because employers train and hire H1B visas but they are going to Google and other companies. For example: Infinite Energy will pay for H1B visas, but not all companies are afforded that privilege. Some employees have left Gainesville because they are not happy. We need to market the area. Most employees say they look for WOW factor on employers' website(s) and new technologies are appealing.
    - No one can teach passion. We need to identify people who are passionate about IT and who has excellent soft skills, and the company can teach them the technical aspects of the jobs. We need to find and grow that spark within individuals at an early age.
    - Cultural fits are also challenges too. We can hire off of skills sets and abilities, but cultural fit is a gamble. Some employers have a hard time with interviewing, such as GRU, because HR professionals are unable to ask specific questions to candidates, such as "what is the last book you read?"
        - Response to above comment: Therefore, help FloridaWorks to properly prescreen candidates, by taking the time to write up descriptions of the company's culture and communicate with FloridaWorks exact needs pertaining to cultural fits.
        - Response to previous comment: HR professionals should scale back on candidate requirements to true essentials. So instead of looking for candidates to have ideal qualities, what are the qualities that are realistic and accessible and identify those requirements when working with FloridaWorks.
    - We should look at the parameters of each company and take advantage of each resource.
    - We need to develop best practices as a community.

Industry and Business Partners Survey February 14, 2013		
Should Santa Fe College add an upper division B.S. degree to our current A.S. degree in Information Technology?	Yes	17
	No	0
If so, what kind of program do you think would be more beneficial to your company?	Advanced Networking	0
	Advanced Programming	8
	Both	9
In our last conversation, we identified skill gaps in the soft skills (problem solving, team work, entrepreneurial skills, technical writing, etc.) of the entry-level programmers. Would this upper level curriculum help close those skill gaps? In your opinion, how important would more soft skills training have in this upper level program?	Top Priority	9
	At par w/ more technical training	6
	Not as important as more technical training	2
Would you be willing to add your letter of support to our application to the Dept. of Education?	Yes	12
	No	2
Would you be willing to help design this program's curriculum?	Yes	11
	No	2
Comments: **TEKSystems (Sam Saks)**: Currently there is more national demand for advanced developers in both Microsoft (SQL and .Net) as well as Java Platforms. Advanced networking skills related to Virtualization, Storage, Unified Communications/VoIP, and Network Security are also growing trends. We are finding few Network/Server openings that do not look for at least some experience with Virtualization platforms such as VMWare, Citrix, or Hyper-V. Additionally, it's becoming more common to look for network/server administrators who have some scripting skills as well whether in VB, Powershell, etc. **352 (Bryan Lewis)**: I believe that James Kies has a deep understanding of the needs of entry-level programmers and his input on the curriculum would be highly valuable as it pertains to Advanced Programming.		

Steven Ware (UF): SFC could probably help fill a local void in education/training in practical networking, mobile application development, security and Linux system administration, if the right curriculum, instructors and support are implemented. Good luck! **Grooveshark (Josh Greenberg):** THANK YOU for helping to advance this forward! **Bradford-Union Technical Center (Brad Bishop):** Answers given by our CS and IT instructors. Thank you! **GRU (David Darius):** I don't think the degree has to be as theoretical as from UF, however, it should be more than just technical vocational training. The learning "how to do" needs to be undergirded with the understanding of "why". **Bradford-Union Technical Center (Steven Miller):** I picked option B but I want to make it clear that the soft skills listed are vital to employers. Being able to hire an individual with strong problem solving skills and the ability to be a strong team player are often critical in maintaining the health and viability of a business. Any program that is going to produce graduates who can meet industry needs must be very flexible as technology changes constantly, from the impact of Moore's law on processing speed and memory capacity to the identification of new uses for technology in all walks of life. As an example, five years ago no one had ever heard of an iPad or 'the cloud', or BYOD, yet these and many other initiative are having a major impact in almost every aspect of society. We must produce graduates who can adapt quickly to these changes. It will be a real challenge to provide a curriculum that is always relevant.		

Respondents:

1. GRU (David Darius)
2. 352 Media Group (Bryan Lewis and Geoff Wilson)
3. Grooveshark (Josh Greenberg)
4. BUTC (Brad Bishop)
5. UF – Information Technology (UFIT) (Steven Ware)
6. TEKSystems (Sam Saks)
7. James Moore and Co. (Chris Meyers)
8. FloridaWorks (Kim Tesch-Vaught)
9. SBAC (Uma Shankar)
10. MindTree (Joelle Smith, Harvinder, Mackenzie)
11. Infinite Energy (Jacquie McDonald)
12. Clay County School Board (George Canova)
13. Tower Hill Insurance Co. ((Ashlei Harris)
14. Career Pathways Crd. (Priscilla Parker)

Santa Fe College ITE Current Student Survey

SurveyMonkey

1. I am interested in continuing my education after receiving my AS from the ITE program.

	Response Percent	Response Count
Yes	97.5%	79
No	2.5%	2
answered question		81
skipped question		0

2. I would be interested if Santa Fe College offered a baccalaureate in the Information Technology area.

	Response Percent	Response Count
Yes	97.5%	79
No	2.5%	2
answered question		81
skipped question		0

3. The cost of the baccalaureate degree would be a factor in my decision.

	Response Percent	Response Count
Strongly Disagree	9.9%	8
Disagree	24.7%	20
Agree	**43.2%**	**35**
Strongly Agree	22.2%	18
	answered question	**81**
	skipped question	**0**

4. I plan on staying in Gainesville after I graduate with my AS.

	Response Percent	Response Count
Strongly Disagree	6.2%	5
Disagree	9.9%	8
Agree	**48.1%**	**39**
Strongly Agree	35.8%	29
	answered question	**81**
	skipped question	**0**

5. I would consider moving outside of the Gainesville area if it meant a better job market in Information Technology.

	Response Percent	Response Count
Strongly Disagree	4.9%	4
Disagree	13.6%	11
Agree	**46.9%**	**38**
Strongly Agree	34.6%	28
	answered question	**81**
	skipped question	**0**

6. I already have a BS/BA or higher degree.

	Response Percent	Response Count
Yes	19.8%	16
No	**80.2%**	**65**
	answered question	**81**
	skipped question	**0**

7. Feel free to comment below on anything mentioned, particularly where you Strongly Agreed or Strongly Disagreed.

	Response Count
	37
answered question	**37**
skipped question	**44**

Page 7, Q7. Feel free to comment below on anything mentioned, particularly where you Strongly Agreed or Strongly Disagreed.		
1	It would make things much more convenient if there was a BAS IT program offered by Santa Fe. I have really enjoyed my time here and if there was an option to continue my education here, I would	May 3, 2013 10:40 AM
2	I have a BS in Psychology but I would really like to get a BS in IT as well. Looking at the jobs listings two years of classes just isn't enough. The only option is UF which doesn't offer classes for working people or enrolling at St. Pete.	May 2, 2013 11:06 PM
3	I really would like a bas program for IT i would like to continue to live in gainesville but for now i have to move much further to continue my education	May 2, 2013 10:53 AM
4	I have already gone into Master's level classes but I would like to keep my career on the IT path. A BA/BS in IT would help me with that.	Apr 29, 2013 11:29 PM
5	I would be willing to move to another place if I can get better pay with my expertise, but I currently plan on remaining in Gainesville. The cost of the degree is not that big of a factor. I would like it to be cheap, but if I can get a Bachelors Degree from Santa Fe I would definitely enroll because right now I'm going to have to get one from an online school since I do not plan on moving.	Apr 29, 2013 8:15 PM
6	If we have a B.A.S IT degree here at Santa Fe, it will save a lot of people, money, time and travel because the A.S. degree doesn't transfer to UF so we have to move to another college or University just to continue with school which will result in more loans and higher housing cost. Having this degree at Santa Fe will be a great change for the students and for the future.	Apr 27, 2013 9:24 PM
7	I plan on transferring to Saint Petersburg College once I am done with SFC. I had hoped that SFC would start a Bachelors program, I'll keep my fingers crossed.	Apr 25, 2013 8:05 PM
8	I really need Santa Fe to start a BAS in IT program!	Apr 22, 2013 6:26 PM
9	I have yet to finish the program, but so far it appears that Santa Fe College does a real service to the community here and to the students. The department seems to pay attention to the needs in the community for what is needed in technological skills, and it seems to respond. By doing so, they are also serving the students.	Apr 22, 2013 9:39 AM
10	I like Gainesville, have lived here a long time and have no intentions of moving away to get a job.	Apr 21, 2013 11:20 PM
11	The instructors I've encountered in the ITE Dept have all been excellent and seem perfectly capable of expanding into a 4 year program. In particular I have the highest regard for Reid, Drake, Russell and Lazin.	Apr 21, 2013 2:35 PM
12	I've been shopping a BAS degree to continue my education anyway.	Apr 21, 2013 11:01 AM
13	I would like to continue my education with Santa Fe College if possible. I really like how the classes are put together and the teachers are always available if needed. I have looked at other colleges for BAS degrees in IT, but not all of them take all the credits that I have earned thus far. I feel that this process would be	Apr 21, 2013 10:46 AM

Page 7, Q7. Feel free to comment below on anything mentioned, particularly where you Strongly Agreed or Strongly Disagreed.		
	streamed lined if Santa Fe were to offer the degree themselves.	
14	The questions all imply seeking a better job as the result, do you also regard the people who do this because of `a love of learning `to be a problem in your world	Apr 20, 2013 7:07 PM
15	I really hope Santa Fe gets a BAS program for information technology. I am currently looking at programs in other cities but I would much rather stay at Santa Fe in Gainesville.	Apr 20, 2013 1:52 PM
16	As it stands now, I have to look into transferring to a Florida university to obtain a Bachelors in IT. Having an option for students to complete one at Santa Fe would be great.	Apr 20, 2013 9:12 AM
17	I recommend Information Assurance and Security. Build a CISSP program.	Apr 19, 2013 5:05 PM
18	I would be willing to stay in Gainesville for the opportunity to continue my education with Santa Fe. I feel 2 years isn't enough time to learn everything I need to be competitive in the work marketplace. Money is not as much as a factor, as long as I can afford it. I place importance on whether the degree is associated with computer languages and website development. I have no interest in the networking technology aspect.	Apr 19, 2013 1:02 PM
19	I have been wanting Santa Fe to offer a BA/BS program in IT for a while, the only other option I would have would be FSU's online Computer Science program. But if Santa Fe offered the program I would choose SF for sure.	Apr 19, 2013 8:05 AM
20	I would LOVE to continue my education and be able to get a BA at Santa Fe. Tell me when I can register!	Apr 19, 2013 6:20 AM
21	If it is within my financial means. I would continue on if a B.S degree was offered for Information Technologies at Santa Fe. the first factor sadly has to be if I could afford it. But If I could then there is no logical reason not to obtain a B.S over an A.S	Apr 19, 2013 2:35 AM
22	I think that it would be a great idea for Santa Fe to offer this program because there aren't many students that have an A.S degrees and bachelors. In today's society you have to have that bachelors to show how qualified you are. I have been looking for jobs for over a year that involved IT, and they all want you to be certified, have a bachelors, or so many years of experience. I believe that the only way for many IT students to gain success in their careers is if they have that degree.	Apr 18, 2013 8:54 PM
23	It would be a great addition to be able to continue my education to complete a Bachelors degree in just two more years after receiving my Associates degree from Santa Fe.	Apr 18, 2013 8:33 PM
24	I'm currently enrolled in the BAS SOM program. I feel that wasn't thoroughly put together correctly. It still has many problems in the teaching material. Teachers have not put the time and effort in to make a balanced program that educates student for success beyond Santa College walls or should I say Gainesville, Florida.	Apr 16, 2013 2:37 AM

Page 7, Q7. Feel free to comment below on anything mentioned, particularly where you Strongly Agreed or Strongly Disagreed.		
25	Currently, the focus of BAS degrees in Florida is on IT Management. However, not all of us want to be managers. There is little focus on Information Security beyond an AS degree. This is becoming an increasingly-important area within the Information Technology field, often requiring advanced degrees and training, but receives very little attention from Florida colleges and Universities. Further, the skills acquired in the AS curriculum is tragically below the quality demanded and expected by employers, not only in Florida, but elsewhere in the nation and world. Before introducing yet another poorly-assembled BAS program, perhaps it is necessary to re-think and re-build, from the ground up, a comprehensive program which not only evaluates, but addresses contemporary industry needs. This means programming, networking and more extensive Information Security. Also, much is devoted to Cisco in almost every AS or BAS curriculum in Florida, which relates to IT. Implementation of Cisco architecture is extensive, but few, aside from dedicated Network Engineers (which current curriculum does not adequately prepare techs to be) will encounter such hardware. Such courses should be relegated to a specialty focus, not made a requirement. That wastes time and money on behalf of the student.	Apr 15, 2013 2:48 PM
26	I do have a BA; however, it is in Sociology. I'm currently concerned with continuing my education in Information Technology and making this my career. I am a non-traditional student at this time. So, costs and scheduling would be my main concern. So far, I know of one individual that started out at Santa Fe (in the ITE) program and went on to get a Masters in IT. A former student is planning to do the same. However, they both have or had to go to different schools outside of Gainesville.	Apr 15, 2013 10:24 AM
27	I think is really good opportunity for students and Santa Fe perfect to learn technology.	Apr 12, 2013 10:30 AM
28	isn't it pretty much inevitable that this degree will have to offered someday? It is just a matter of time.	Apr 11, 2013 9:05 PM
29	I think that it would be wonderful if Santa Fe offered a four year program. I was planning on continuing my education with one of the colleges currently offered for ITE but would much rather be affiliated with Santa Fe for a four year degree.	Apr 11, 2013 7:10 PM
30	A BAS degree in ITE is an excellent idea! Thanks!	Apr 11, 2013 12:28 PM
31	SFC should offer a BS in the IT field. I would like to see more online classes available so that I could pursue my degree and keep my full time job.	Apr 11, 2013 12:12 PM
32	Being a UF employee I am limited in what they will pay for in the EEP program for higher education. If a BAS was offered directly at Santa Fe, the degree would be elegable instead of the other BAS transfers to external colleges such as St. Pete college which is not covered. Please, please, please please create a BAS for ITE and I would (as well as at least half a dozen other IT employees I know who work at UF) sign up for the degree.	Apr 11, 2013 11:35 AM
33	I know there are many individuals at the University of Florida who working towards the current AS degree and who would be greatly interested in this opportunity. I personally would love this opportunity to continue my education in Gainesville.	Apr 11, 2013 11:32 AM

Page 7, Q7. Feel free to comment below on anything mentioned, particularly where you Strongly Agreed or Strongly Disagreed.		
34	I think this would be an amazing opportunity for all ITE students!	Apr 11, 2013 11:28 AM
35	Since I do plan on staying in Gainesville, I think having a BAS program actually here at Santa Fe would be a big motivator to continue my education.	Apr 11, 2013 11:27 AM
36	I think Gainesville needs more high-tech jobs, in addition to more students coming out of any school with a BAS in ITE. With an outpouring of students with ITE degrees, it might encourage the city to really attract high-tech businesses.	Apr 11, 2013 11:25 AM
37	I feel there is a need for a BAS degree in ITE. It would fill the gap for well trained ITE positions between the AS degree and the BS from the University of Florida.	Apr 11, 2013 11:18 AM

Santa Fe College ITE Graduate Survey

SurveyMonkey

1. I would be interested in returning to Santa Fe College if a baccalaureate degree were offered in Information Technology?

	Response Percent	Response Count
Yes	**100.0%**	**24**
No	0.0%	0
	answered question	**24**
	skipped question	**0**

2. An Information Technology baccalaureate degree would help me to acquire a job or advance in my current job.

	Response Percent	Response Count
Strongly Disagree	0.0%	0
Disagree	0.0%	0
Agree	25.0%	6
Strongly Agree	**75.0%**	**18**
	answered question	**24**
	skipped question	**0**

3. The cost of the baccalaureate degree would be a factor in my decision.

		Response Percent	Response Count
Strongly Disagree		4.2%	1
Disagree		16.7%	4
Agree		**45.8%**	**11**
Strongly Agree		33.3%	8
		answered question	**24**
		skipped question	**0**

4. I currently work in the Information Technology field.

		Response Percent	Response Count
Yes		**79.2%**	**19**
No		20.8%	5
		answered question	**24**
		skipped question	**0**

5. I do freelance work.

		Response Percent	Response Count
Yes		37.5%	9
No		**62.5%**	**15**
		answered question	**24**
		skipped question	**0**

6. Freelance work contributes to my income.

	Response Percent	Response Count
Yes	29.2%	7
No	**70.8%**	**17**
	answered question	**24**
	skipped question	**0**

7. Feel free to comment below on anything mentioned, particularly where you Strongly Agreed or Strongly Disagreed:

	Response Count
	9
	answered question	**9**
	skipped question	**15**

Page 7, Q7. Feel free to comment below on anything mentioned, particularly where you Strongly Agreed or Strongly Disagreed:		
1	I would love to see this type of program at Santa Fe College. I have only an A.S. in Networking and Internet Services and I didn't even get a job when I applied for an IT position because they were mostly looking for bachelor's degree. Actually, I didn't even get called for a job interview.	Mar 17, 2014 2:57 PM
2	Higher education is always a good idea and allowing students to further their careers should be a no brainer. Santa Fe is an excellent institution that I enjoyed attending, not only because of the costs but the smaller classrooms and helpful professors helped me achieve great scholastic success. I would love to have the option to turn my A.S. degree into a B.A. without the huge costs associated with traditional Universities. Please don't give up on the students who can't afford the luxury of attending a state university. Everyone should have the opportunity to succeed and Santa Fe makes that a reality to a large number of those less fortunate.	Mar 17, 2014 7:10 AM
3	Please make this a thing. I would love to do this!	Mar 16, 2014 11:15 PM
4	B.A.S would be a major consideration for my future educational needs, I currently hold an AA in Gen Sci and Engineering from SF and an AS in Internet Services Tech. I am enrolled in the B.A.S. in Management, however the courses are not in the same vein of practical studies that I feel would best suit my career path. A B.A.S directly relating to this field is a needed resource for SF alum.	Mar 16, 2014 1:49 PM
5	Santa Fe is a fantastic school and people need the option of a place to attend school while they work full time and the ability to earn BA and BS degrees.	Mar 16, 2014 10:12 AM
6	Many employers factor whether or not a potential employee has a bachelors degree.	Mar 15, 2014 5:19 PM
7	It's absolutely important. The IT field doesn't necessarily REQUIRE BA or BAS degrees but it absolutely helps with finding employment in lieu of work experience which is already ridiculously hard to find, and on top of that it helps us as IT professionals get a wage that's not completely absurd. Many IT professionals are paid close to minimum wage despite having experience or strong natural skills strictly based on the fact that they don't have the "education". Providing the education will help strengthen our the IT field of work as a whole and that's extremely important. I've dealt with "IT professionals" that are complete and utter failures far too many times already.	Mar 15, 2014 4:21 PM
8	Having a BAS in IT would help me to obtain a Job with Verizon. Verizon is wanting to hire me but said that per company policy they are not able to offer me a job until I have a BAS degree in IT.	Mar 15, 2014 3:06 PM
9	Santa Fe College's Internet Services Technology AS degree was great at giving me an introduction to computer science but after working in the field it became clear that the IST degree did not provide me with all the skills that I needed in a modern software development position. The IST degree only skims the surface and additionally most employers require BS or equivalent experience. A more in-depth program is necessary to actually prepare students, and if the degree earned is a BS then hopefully the content will on par with a university-level BS degree.	Mar 15, 2014 2:35 PM

Program:	Information Technology	**CIP:**	11.0103
	Information Systems Technology	**Track:**	4/4
Offered At:	IRSC, SSCF	**Program Length:**	120 Cr. Hrs.

NEW 3/2/11
REVISED 10/24/12

LOWER LEVEL COURSES

		Cr. Hrs.	
	MACX105	3	College Algebra
or	or higher level mathematics		
&	STAX023	3	Statistical Methods
or	STAX014	3	
&	ECOX013	3	
or	ECOX023	3	
&	SPCX608	3	Introduction to Oral Communication
&	CEPX486C	3	Network Concepts and Operating System
&	COPX000	3	Introduction to Programming
&	CGSX540C	3	Database Management

FOR ALL MAJORS: Students are strongly encouraged to select required lower division electives that will enhance their general education coursework and that will support their intended baccalaureate degree program. Students should consult with an academic advisor in their major degree area.

DEGREE REQUIREMENTS [+]
BACHELOR OF SCIENCE IN COMPUTER SCIENCE (CSE) – CATALOG 2014 AND LATER
DEPT OF COMPUTER AND INFORMATION SCIENCE AND ENGINEERING
COLLEGE OF ENGINEERING, UNIVERSITY OF FLORIDA

CSE

GENERAL EDUCATION (18)***

Composition (includes ENC 3246).....3
Social and Behavioral*.....6-9
Humanities*(includes HUM 2305).....6-9
International and Diversity**.....6

* Both categories combined must total 15 hours with no fewer than 6 hours taken in either category (i.e. 6 in one, 9 in other).
**Courses selected will also fulfill the General Education requirement in Social and Behavioral (S) or Humanities (H).
***The Mathematics, Physical Sciences, and Biological Sciences requirements are covered by the departmental requirements below.

DEPARTMENTAL REQUIREMENTS

Mathematics (18)

__**MAC 2311 Analytic Geometry & Calculus 1** 4
__**MAC 2312 Analytic Geometry & Calculus 2** 4
__**MAC 2313 Analytic Geometry & Calculus 3** 4
__MAS 3114 Comp. Linear Algebra (Cal 2 & prog. lang.exp.) ..3
__STA 3032 Engineering Statistics (Cal 1) 3

Physics (8)

__**PHY 2048 Physics w/Cal 1** (HS Physics, Cal 1; Cal 2, PHY2048L) ..3
__PHY 2048L Lab for PHY 2048 (PHY 2048) 1
__**PHY 2049 Physics w/Cal 2** (PHY 2048; Cal 3, PHY 2049L) 3
__PHY 2049L Lab for PHY 2049 (PHY 2049) 1

Chemistry (4)

__**CHM 2045 Gen Chemistry** (CHM 1025; pass chem. readiness) .3
__CHM 2045L Lab for CHM 2045 (CHM 2045) 1

Communications (6)

__ENC 3246 Professional Communications for Engineers 3
__Writing or Public Speaking course (from approved list) 3

Interdisciplinary Electives (14) (choose one option)

Option A*: 14 credits applicable to a formal UF minor and not counting toward other requirements; completion of minor not required if it exceeds 14 credits, however, it is highly recommended.
Option B : 14 credit hours in courses in a concentration area outside of CISE at 3000-level (advisor approval required).
* If the completed minor contributes less than 14 credits to ID Electives, the remaining credits can be fulfilled with additional upper-division coursework in the area of the minor or with CISE technical electives.

Computer Science Major Courses (39)

__**COP 3502 Prog. Fundamentals 1** (MAC 2311) 3
__COP 3503 Prog. Fundamentals 2 (MAC 2311, COP 3502).....3
__COT 3100 App. of Discrete Structures (MAC 2311, COP 3503) 3
__COP 3530 Data Struct & Algorithms (COP 3503, COT 3100, Cal 2) 4
__CDA 3101 Intro to Comp Organization (Cal 1, COP 3503) 3
__CEN 3031 Intro to Software Engineering (COP 3530) 3
__COT 4501 Numerical Analysis (COP 3504/03, MAS3114) 3
OR MAD 4401 Int. Num. Anlys. (MAS 3114) *if Math minor 3
__COP 4600 Operating Systems (COP 3530, CDA 3101) 3
__CNT 4007C Comp. Network Fund. (COP 4600) 4
__CIS 4914 Sr. Project or CIS 4913C-IPPD 2 (4EG) 3
__CIS 4301 Info & DB Sys Dsgn & Dev 1(COP 3503, COT 3100) 3
__EEL 3701C Digital Logic & Computer Systems (COP 3503) 4

Ethics (1)

__EGN 4034 Professional Ethics (4EG+) 1
OR CGS 3065Legal & Social Issues in Computing (F) 3

Technical Electives (15**) - 11 hrs must be CISE courses

__ANY 4000-level CISE course (see current course sched.)....3
__CIS 4930 Special Topics (advisor approval).....3
__EGN 4912 Engineering Undergraduate Research.....1-3
__CIS 4940 Internship (advisor approval) 1
__CIS 4949 Co-op (advisor approval) 1
__EIN 4354 Engineering Economy (Jr. Standing) 3

***The above list is not exhaustive, nor are all courses always offered. Electives also may be:**

1) Any 4000-level or higher ECE or PHY course not taken to fulfill some other requirement, excluding EEL 3003, EEL 4834, and most CGS courses.
2) MAP 2302 or any 4000-level math or statistics course with the prefix STA, MAA, MAD, MAP, MAS or MHF not taken to fulfill any other requirement with the following exceptions:
- Take only ONE of these: COT 3100, MAD 4203, or MAD 3107.
- Take only ONE of these: COT 4501 and MAD 4401
- Take only ONE of these: COT 4420 and MAD 4504

3) Students may take up to two (2) 3000-level CAP courses
4) Students may take up to one (1) of the following:
EGN/S 4038, 4641, or 4643,

****At most, 3 credits of a programming language course may count towards technical elective credit. See Advisor for approval.**

NOTES:

- **Students must complete all Critical Tracking (bold) courses with a C or better within two attempts (W counts as an attempt) within 5 semesters, while maintaining a 2.5 tracking GPA. Must maintain UF and CISE GPA of 2.0.**
- **ENC 3246, EEL 3701C, and COP 3503 must be completed with a C or better. A grade of C- or lower will not fulfill degree requirements.**
- **A minimum grade of C is required in all other courses that are prerequisites to a required course: CDA 3101, COP 3503, COP 3530, COP 4600, COT 3100 and MAS 3114.**
- **Students who do not meet requirements above will be placed on academic probation and will be required to sign a probation contract with a CISE advisor. Students are normally given two terms to raise gpa's or remove their deficit points; however, students who do not satisfy the conditions of the first term of probation may be dismissed from the department.**
- **Courses in parenthesis are prerequisites; underlined courses are co-requisites.**
- **An Exit Interview is required during final semester. Please see an academic advisor for details.**
- **CGS 3065 will count for both the Ethics requirement and 3 hrs of Technical Elective.**

[+]Minimum Total Hours.....120

Rev Fall 2014 - This document is intended to be used only as a counseling guide. Graduation requirements are more completely specified in the UF Undergraduate Catalog.

DEGREE REQUIREMENTS[±]
BACHELOR OF SCIENCE IN COMPUTER ENGINEERING – SOFTWARE (CEN)
FOR STUDENTS ENTERING CATALOG YEAR 2012 OR LATER
DEPT OF COMPUTER AND INFORMATION SCIENCE AND ENGINEERING
COLLEGE OF ENGINEERING, UNIVERSITY OF FLORIDA

CEN

GENERAL EDUCATION (18)***

Composition (ENC 3254).....3
*Social and Behavioral(S).....6-9
*Humanities(HUM2305)(H).....6-9
International and Diversity**.....6

* Both categories(H,S) combined must total 15 hours with no fewer than 6 hours taken in either category (i.e. 6 in one, 9 in other).
**Courses selected could also fulfill the General Education requirement in Social and Behavioral (S) or Humanities (H).
***The Mathematics, Physical Sciences, and Biological Sciences requirements are covered by the departmental requirements below.

DEPARTMENTAL REQUIREMENTS

Mathematics (21)

__**MAC 2311 Analytic Geometry & Calculus 1** 4
__**MAC 2312 Analytic Geometry & Calculus 2** 4
__**MAC 2313 Analytic Geometry & Calculus 3** 4
__**MAP 2302 Elementary Differential Equations** (Cal 2) 3
__MAS 3114 Comp. Linear Algebra (Cal 2 & prog. lang.exp.) ...3
__STA 3032 Engineering Statistics (Cal 1) 3

Physics (8)

__**PHY 2048 Physics w/Cal 1** (HS Physics, Cal 1; Cal 2, PHY2048L) ..3
__PHY 2048L Lab for PHY 2048 (PHY 2048) 1
__**PHY 2049 Physics w/Cal 2** (PHY 2048; Cal 3, PHY 2049L) 3
__PHY 2049L Lab for PHY 2049 (PHY 2049) 1

Chemistry/Biology (7)

__**CHM 2045 General Chemistry** (CHM 1025; or passing grade on chem. readiness exam) 3
__CHM 2045L Lab for CHM 2045 (CHM 2045) 1
__**CHM 2046 Chemistry & Qualitative Analysis** (CHM 2045)
OR any non-CHM 2000-level Phys. or Bio. Science course with a Gen. Ed. designation of (P) or (B).....3

__ **Engineering Core (5)**--Take two courses from 2 of the 5 groups: See advisor for approved list of courses.

Computer Engineering Major Courses (49)

__COP 3504 Adv. Prog. Fund. for CISE Majors (Cal 1, prog. exp.) ..3
OR COP 3502 + COP 3503 Prog. for CISE Majors 1&2 ..... 3*
__COT 3100 App. of Discrete Structures (Cal 1, COP 3504 or COP 3503) 3
__CDA 3101 Intro to Comp Organization (Cal 1, COP 3504/03) 3
__COP 3530 Data Struct & Algorithms (COP 3504/03, COT 3100, Cal 2) 4
__CEN 3031 Intro to Software Engineering (COP 3530) 3
__COP 4600 Operating Systems (COP 3530, CDA 3101) 3
__CNT 4007C Comp. Network Fund. (COP 4600) 4
__CEN 4914 Sr. Project **OR** CIS 4913C-IPPD 2 (4EG) 3
__COT 4501 Numerical Analysis (COP 3504/03, MAS3114) 3
OR MAD 4401 Int. Num. Anlys. (MAS 3114) *if Math minor 3
__EEE 3308C Electronic Circuits 1 (EEL 3111C) 4
OR EEL 3135 Signals & Systems (Cal 3, COP 3504/03, MAP 2302) 4
__EEL 3111C Circuits 1 (PHY 2049, Cal 3) 4
__EEL 3701C Digital Logic & Computer Systems (COP 3504/03) ..4
__EEL 4712C Digital Design (EEL 3701C) 4
__EEL 4744C Microprocessor Applications (EEL 3701C) 4
* COP 3502 will count for 3 hrs of Technical Elective.

Ethics (1)

__EGN 4034 Professional Issues in Engineering (4EG) 1
OR EEL 2000 Intro to Elec. And Comp. Engr. 2

Technical Electives* (18**)--12 hrs must be CISE courses

__CAP 4053 AI for Computer Games (COP 3530).....3
__CAP 4410 Digital Image Processing (COP 3530) 3
__CAP 4621 Artificial Intelligence & Heuristics (COP 3530) 3
__CAP 4680 Knowledge-Based Syst.: Theory & Pract. (CAP 4621) 3
__CAP 4730 Comp. Structures in Computer Graphics (COP 3530) 3
__CAP 4800 Systems Simulation (COP 3530) 3
__CAP 4403 Aesthetic Computing (COP 3530) 3
__CDA 4102 Computer Architecture (CDA 3101, COP 3530) 3
__CEN 4012 Software System Development (CEN 3031) 3
__CEN 4072 Software Testing & Verification (CEN 3031) 3
__CGS 3065 Legal & Social Issues in Computing (F).....3
__CIS 4301 Info & DB Sys Dsgn & Dev 1(COP 3504/03, COT 3100) ...3
__CIS 4905 Individual Study 1-4
__CIS 4912C IPPD 1 (CDA 3101, COP 3530, consent of instr.) 3
__CIS 4930 Special Topics (advisor approval) 3
__CIS 4940 Internship (advisor approval) 1
__CIS 4949 Co-op (advisor approval) 1
__COP 4020 Programming Language Concepts (COP 3530) 3
__COP 4331 Object-oriented Programming (COP 3530) 3
__COP 4343 UNIX System Administration (COP 4600) 3
__COP 4620 Translators & Translator Writing Sys. (COP 3530) ...3
__COP 4720 Info & DB Sys Dsgn & Dev 2 (CIS4301, COP 3530) 3
__EIN 4354 Engineering Economy (Jr. Standing)
(EIN 4354 can be used as a CISE Technical Elective or as an Engineering Core. It cannot count in both areas.)

*** The above list is not exhaustive. Electives may be:**
1) Any 3000-level ECE or PHY course not taken to fulfill some other requirement, excluding EEL 3003, EEL 4834, and most CGS courses.
2) Any 4000-level math or statistics course with the prefix STA, MAA, MAD, MAP, MAS or MHF not taken to fulfill any other requirement with the following exceptions:

- Take only ONE of these: COT 3100, MAD 4203, or MAD 3107.
- COT 4501 and MAD 4401 may not take both
- COT 4420 and MAD 4504 may not take both

****COP 3502, COP 3275, and COP 3229 are considered programming language courses. At most, 3 credits of a programming language course may count towards technical elective credit. See Advisor for approval.**

NOTES:

- **Students must complete all Critical Tracking (bold) courses with a C or better within two attempts (W counts as an attempt), while maintaining a 2.5 tracking GPA. Must maintain UF and CISE GPA of 2.0.**
- **COP 3504 is not equivalent to COP 3503. Any student who takes COP 3502 must then take COP 3503. If a student takes COP 3502/3503 sequence, then they do not have to take COP 3504.**
- **ENC 3254, EEL 3701C, COP 3504, and COP 3503 must be completed with a C or better. A grade of C- or lower will not fulfill degree requirements.**
- **Courses in parenthesis are prerequisites; underlined courses are co-requisites.**
- **An Exit Interview is required during final semester. Please see an academic advisor for details.**

[±]Minimum Total Hours.....126

Rev 5/11 - This document is intended to be used only as a counseling guide. Graduation requirements are more completely specified in the UF Undergraduate Catalog.

CareerSource
NORTH CENTRAL FLORIDA

careersourcencfl.com

April 23, 2015

Dr. Jackson Sasser, President
Santa Fe College
3000 NW 83rd St.
Gainesville, FL 32606-6200

Dear President Sasser:

At the request of Mr. Jorge Ibanez, we are providing a letter of support for the proposed Information Systems Technology Bachelor of Applied Science degree at Santa Fe College. As you are aware, supporting a workforce in the Technology sector at the baccalaureate level is an important component to growing this sector of our economy here in Alachua County and for the State of Florida. Your proposed program would be instrumental in providing the needed STEM talent for our area that would have relevant industry training. Through our HBOTT program, CSNCFL has been able to support more than 20 start-up companies in the last 5 years by helping them hire more than 300 employees in STEM fields many with a focus on information technology. The focus has been in hiring American's to fill jobs that are typically filled through the use of H1B visas. The support is through on-the-job training. The employer demand continues to outpace the pipeline of degreed, experienced IT talent. Advertised job openings in our region are consistently over 140 openings specific to IT occupations.

CareerSource North Central Florida has done extensive research into the skills gap within the technology sector in our community. Programs such as our Gainesville Information Technology program, which researched this topic in conjunction with the Gainesville Area Chamber of Commerce, found that technology companies in our area do in fact see a skills gap in local perspective hires, and more programs to assist with training at these skills would be a great help.

Santa Fe College has consistently provided quality students to the Technology workforce of our community, and many of our area companies have benefited from the heightened level of training the newly graduating students have obtained. I am confident that this new degree program will continue in the excellence that has been demonstrated by Santa Fe College graduates. We will strive to provide internships for students as they progress through their degree programs and look forward to working with this new program.

Sincerely,

Kim Tesch-Vaught

Executive Director
CareerSource North Central Florida

Ktesch-vaught@fmsworks.com
4800 SW 13th St. | Gainesville, FL 32604
p: 352.872.5904 | f: 352.244.5958

Grooveshark

Date: March 17, 2015
To: Jorge Ibanez, Santa Fe College
From: Josh Greenberg, Co-founder & CTO, Grooveshark

Letter in Support of BAS in Information Systems Technology at Santa Fe College

Grooveshark is a Gainesville-based company with 100 employees, with plans to grow our headcount by 300+ local high-tech positions over the next few years.

For over two years, we have been actively looking for new frontend and backend web developers, iOS and Android mobile developers, systems engineers, and various other individuals with high-tech skills. Qualified candidates have been nearly impossible to find in our local workforce, which has stalled our recruiting operations.

The business community of Gainesville echoes our concerns. Every major tech company in town is starved for developers, and the local pipeline is simply inadequate to fill our needs. Crucial developer positions sit vacant for months, or even years, and many companies have been forced to take drastic measures, ranging from relocating out of Florida to hiring candidates who lack the skills to be effective in their jobs.

The clear shortage of local dev talent is harming the local economy. A BAS in Information Systems Technology from Santa Fe College would be a huge step toward remedying these issues, and would mark a big step forward for Gainesville's tech sector. This degree would result in more job positions being filled, and more high-tech talent staying in the community.

For these reasons and more, this BAS in IST initiative has Grooveshark's full support.

Josh Greenberg
Co-founder & Chief Technology Officer
Grooveshark

grooveshark.com
contact@grooveshark.com
(888) 446-2873

GAINESVILLE
201 SE 2nd Ave. Suite 201
Gainesville, FL 32601

NEW YORK
254 W 31st St. 4th Floor
New York, NY 10001

March 17, 2015

Jorge Ibanez
Director, Information Technology Education
Santa Fe College
3000 NW 83rd Street
Building N, Room 229
Gainesville, FL 32606

Dear Mr. Jorge Ibanez:

With this letter, Gainesville Regional Utilities (GRU) confirms its support for the Santa Fe College BAS curriculum in Information Systems Technology.

GRU, established in 1912, is a Public Utility serving the Gainesville area with Electric, Natural Gas, Water, Wastewater and Telecommunication services. GRU has several graduates of Santa Fe College (SFC) on staff and has participated in the SFC internship program. GRU Information Technology has and is working with SFC to provide employer input into IT related course curriculum in order to develop local IT talent for the growing needs of the community.

Please accept this letter as assurance that we have helped identify the skills and competencies for the program and have reviewed the program design, goals and objectives. Our organization will continue to assist by identifying the necessary skills and competencies needed for the roles of programmer, network and server administrators, DBAs, PC technicians, security analyst, and business analysts within our organization and any other positions identified during this program that would fit with our organization.

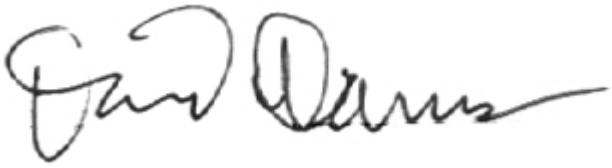
GRU has identified an ongoing need for advanced technical training of IT workers, ideally those who have earned a college 4 or 2 year degree, certificate and/or industry-recognized credential such as CCNA, CCNP, MCSA, MCSE+I, MCSE, VCP, CISSP, CompTIA because the local IT job market has become more scarce and sophisticated. Our particular need is for educated and training IT people with a four year degree that not only know how to do IT but also know the why behind the how, and ability to reason about IT beyond specific training. We find that this is best accomplished with a four year degree.

Additionally, GRU has worked with the FloridaWorks initiative Gainesville Information Technology (GIT) group to express the need for more skilled training in IT. GIT gatherings and forum particularly identified the dearth of advanced programming skills among the local workforce. GRU itself has had to use hiring agencies to find qualified talent with some hired who live outside of the Gainesville regional area. We anticipate an increasing need for these skilled positions over the next several years as the innovation economy in the Gainesville area community continues to grow.

We have to compete globally for IT talent so any efforts to increase the educational opportunities in our local area will help us attract and retained much needed IT talent. I think a BAS option in the setting of SFC will be a vital avenue to produce such workers as some students are better able to succeed at SFC than at UF. We look forward to working with Santa Fe College to ensure we have the trained workforce necessary for our company's success.

We are prepared to demonstrate our commitment to this project to ensure program participants will be prepared with the skills they need to enter and succeed in Information Technology careers, and appreciate your sincere consideration of this important and innovative project.

Sincerely,



David Darus
GRU IT Infrastructure and Administration Manager

digitalbrands™

15 SE 1st Ave, Ste B | Gainesville, FL 32601
(888) 217-5962 | www.DigitalBrands.com

Jorge,

I am writing to thank you for meeting with us and discussing our needs as a tech company in Gainesville.

We are always looking to hire talented entry-level computer science students with background courses in web technologies, version control and mobile development. As we have noted both in the GIT forums and in our one-on-one talks, more job skills training is critical to the functioning and growth of Gainesville as a technological leader in the state.

Currently, we look to hire outside talent so we can find the job skills we need to grow. If there is anything you can do to further the development of your students to a more modern course curriculum, it would be greatly appreciated and no doubt have a huge impact on our local community.

Thanks,

Ryan S. Frankel

CTO, Digital Brands Inc.

March 7, 2014

Jorge Ibanez
Director, Information Technology Education
Santa Fe College
3000 NW 83 St, Gainesville, FL 32606

Dear Mr. Ibanez:

SumTotal is the business performance and learning technology industry's largest single provider of technologies, processes and services. SumTotal's clients include over 50% of the world's Fortune 500 companies. SumTotal Systems LLC moved our headquarters to Gainesville, FL from Silicon Valley, CA, in 2010. In addition to our headquarters in Gainesville, we have offices throughout the US as well as Canada, London, Tokyo, and Hyderabad, India. We are a privately held company that currently employs approximately 1000 full-time employees worldwide. We anticipate hiring approximately 200 new employees over the next two years.

With this letter, SumTotal confirms its support in Santa Fe College's proposed new BAS in Information Systems Technology.

SumTotal Systems has identified an ongoing need in the local IT job market for entry-level IT workers, ideally those who have earned a degree and have more advanced technical training. As the job market becomes more sophisticated, our hiring pool is strained due to the dearth of advanced programming skills among the local talent pool. This lack of talent and the need for more job skills training is frequently discussed in the GIT forums. In fact some local IT companies, including SumTotal, have had to import talent from our overseas offices or export jobs to other parts of the globe or other offices in the US due to the local inability to hire. We anticipate an increasing need for these skilled positions over the next several years as our Gainesville innovation economy in our community continues to grow.

We are prepared to demonstrate our commitment to this project to ensure program participants will be prepared with the skills they need to enter and succeed in Information Technology careers, and appreciate your sincere consideration of this important and innovative project.

Sincerely,

Richard Oyen
Vice President Human Resources
SumTotal Systems, LLC.

SUMTOTAL SYSTEMS, LLC
2850 NW 43RD STREET
SUITE #150
GAINESVILLE, FL 32606, USA

www.sumtotalsystems.com
O +1 352 264 2800
F +1 352 374 2257

Tower Hill
Insurance

February 18, 2014

Florida Department of Education
325 West Gaines Street
Tallahassee, FL 32399

To: Florida Board of Education

Tower Hill Insurance Group, LLC fully supports Santa Fe College's proposal for a new BAS in Information Systems Technology.

As technology continues to grow and improve, we are constantly searching for top IT talent to meet our recruitment and staffing needs. In a small market such as Gainesville, we find ourselves importing talent from larger metropolitan areas. As a member of the Gainesville Information Technology forum, local companies have come together to share our frustrations with the short supply of IT talent in our area.

Santa Fe College representatives have attended these GIT forums and are attempting to offer a solution to this issue. They are working directly with local businesses to design a program tailored to meet the advanced IT skill requirements of the current workforce.

With Santa Fe's new program, we hope to be able to hire local students who have received advanced technical training and possess the skill sets we need to immediately fulfill our business needs.

If you have furthers questions, please feel free to contact me via email, aharris@thig.com or by phone, (352) 333-1245.

Sincerely,

Ashlei Harris

Ashlei Harris
HR Generalist

P.O. Box 147018, Gainesville, FL 32614-7018 • www.thig.com • (352) 332-8800 • FAX: (352) 332-9999

Parisleaf

March 24, 2015

Jorge Ibanez
Director, Information Technology Education at Santa Fe College
3000 NW 83rd Street
Building N, Room 229
Gainesville, FL 32606

Dear Mr. Jorge Ibanez:

With this letter, Parisleaf confirms its support for the Santa Fe College BAS curriculum in Information Systems Technology.

Established in 2010, Parisleaf has been an advocate supporter of Santa Fe College and its mission to develop world-class talent for the Gainesville community and beyond.

Please accept this letter as verification that we have vetted the program design, goals and objectives and believe it will be a key course in filling our community's talent shortage in IT. Our organization is happy to continue supporting the developing and evolution of the program by identifying the necessary skills and competencies needed for the roles of programmers and web developers.

Parisleaf has had a consistent need for well-trained website developers, ideally those who have earned a 2-year or 4-year degree, certificate and/or industry-recognized credentials. Though we began as a paper company, Parisleaf has responded to client and market demands for premium website development services.

Our particular need is for developers with web design, information systems, and security expertise, all of which are addressed in the proposed program curriculum. Parisleaf's clients expect a level of expertise that their websites are well-developed, stable, secure, and provide a unique interactive functionality that meets their business goals and objectives. This program will train talent to satisfy those needs.

We're thrilled to support the launch and development of this program. Please contact me if there are any questions or concerns.

Sincerely,

Chad Paris
Founder & CEO

Info Tech

March 20, 2015

Jorge Ibanez
Santa Fe College
Information Technology Education
3000 NW 83rd Street
Gainesville, FL 32606

Re: Info Tech, Inc. support for Santa Fe College's intent to offer a Bachelor of Applied Science degree in Information Systems Technology

Dear Mr. Ibanez:

Info Tech, Inc. is pleased to provide this letter in support of Santa Fe College's intent to offer a Bachelor of Applied Science degree in Information Systems Technology. The local technology job market in Gainesville has increased greatly over the last few years. With the addition of Innovation Square in the downtown area, the city will need many more advanced technology trainings as it attempts to support the information technology sector growth.

Info Tech strongly supports hiring from our Florida universities and colleges, and has been doing so for over 35 years. Recruiting top talent is a challenging priority now more than ever, and we believe it will be greatly aided by quality programs and trainings being offered by our local institutions. This will increase students' and current employees' chances of success in an ever-changing and increasingly competitive market.

Info Tech sends employees to conferences and seminars for further and updated training in technology all over the country to keep up with the various programs and languages in the information technology sector. At times, Info Tech must hire from outside of the city and the state of Florida. The city of Gainesville would benefit from a college program with more classes and a higher level of training for the technology market. This degree offering would benefit both students and local employers for both the near and long-term future.

Thank you for the opportunity to support this important initiative to bring more training in information technology to the city of Gainesville.

Sincerely,

Thomas P. Rothrock
President

www.infotechfl.com

5700 SW 34th Street ▪ Suite 1235 ▪ Gainesville, FL 32608-5371 ▪ Phone: (352) 381-4400 ▪ Fax: (352) 381-4444

SF SANTA FE COLLEGE

3000 N. W. 83rd Street (K-230)
Gainesville, Florida 32606

Priscilla Parker
Program Coordinator
Career Pathways
Connecting Students to College and Careers

May 5, 2015

TO: Jorge Ibanez
Director, Information Technology Education
Santa Fe College

FROM: Priscilla Parker
Coordinator, Career Pathways
Santa Fe College

Re: Letter of Support
Bachelor of Applied Sciences Degree
Information Systems Technology, Santa Fe College

This serves as confirmation that the Santa Fe College Career Pathways program supports your efforts to provide a Bachelor of Applied Science curriculum and degree in Information Systems Technology (IST).

Based on what CareerSource and the Gainesville Area Chamber of Commerce report about the growing need for trained and highly skilled Information Technology workers in our region as a technology hub, a career pathway in IST that begins in high school and leads to further education and a four-year degree seems critical for meaningful employment.

As coordinator of the Career Pathways programs for SF and the Alachua and Bradford county school districts, we have valued the collaboration from your department in providing articulated courses for high school students that link them to IST programs at SF through industry certification and course examinations and lead to an A.S. degree.

By further offering an opportunity for students to earn a BAS degree in IST, this opens up a new avenue for jobs to be filled and for professionals to remain in our community in positions such as Database Administrators, Network and Computer Systems Administrators, Software Developers, Computer Systems Analysts, and Computer Programmers—all of which require a bachelors-level education.

We look forward to what this proposed degree will mean for career and technical students in our Alachua and Bradford county school districts and Santa Fe College as students continue from one level of academic and technical training to another along their career pathway.

Santa Fe College • NW 83rd Street • Building K, Suite 230 • Gainesville, Florida 32606
PHONE (352) 395-5885 ~ FAX: (352) 395-5882 ~ E-mail: priscilla.parker@sfcollege.edu

UF UNIVERSITY of FLORIDA

College of Engineering
Office of the Dean

300 Weil Hall
PO Box 116550
Gainesville, FL 32611-6550
352-392-6000
352-392-9673 Fax

April 9, 2015

Edward T. Bonahue, Ph.D.
Provost
Santa Fe College
Gainesville, FL 32606

Dear Ed,

I write to offer my strong support for Santa Fe's proposed baccalaureate program in information systems technology. I have carefully reviewed your complete program application, and I concur with your conclusion that there is significant demand for baccalaureate-trained IT professionals in our region.

Moreover, I find that the proposed Santa Fe degree and UF's existing degrees will be complementary. As you know, we seek to place graduates from the UF computer science and computer engineering programs across the country in leading national and international firms. Unfortunately, our achievement of this goal means we can place somewhat fewer graduates in our immediate region. The College of Engineering is acutely aware of the unmet needs of local companies, including Mindtree, Mobiquity, Infinite Energy, GRU, GrooveShark, and the IT departments of many other local employers, and so we welcome SF's contribution to meeting this need. We also find that the proposed curriculum is distinct, in that it offers workforce-oriented skills that are less theory-based than our programming in the College of Engineering. So the proposed Santa Fe degree is especially welcome at this time, as it will support entry-level specialists and technicians with two-year degrees as they move into professional positions requiring baccalaureate credentials.

As we have discussed over the past year, we see this program as just one aspect of the continued collaboration between Santa Fe College and UF College of Engineering.

Sincerely,

Cammy R. Abernathy
Dean

UF UNIVERSITY of FLORIDA

Office of the Provost
and Senior Vice President

235 Tigert Hall
PO Box 113175
Gainesville, FL 32611-3175
352-392-2404 Tel
352-392-8735 Fax

May 7, 2015

Dr. Ed Bonahue
Provost
Santa Fe College
3000 NW 83rd Street
Gainesville FL 32606

Dear Ed:

I am writing regarding Santa Fe's proposed baccalaureate degree program in Information Systems Technology. I concur with the comments offered in an accompanying letter by UF Dean of Engineering Cammy Abernathy, and I support the proposed degree program.

Sincerely yours,

Joseph Glover
Provost

SF | Lawrence W. Tyree Library
SANTA FE COLLEGE

352-395-5409 ◆ reference@sfcollege.edu

Library Services/Resources Summary for Information Systems Technology

Mission

The mission of the L. W. Tyree Library, located on the Northwest campus, is to serve all Santa Fe College students, faculty and staff, thus supporting the SF mission. The Library provides knowledgeable staff, appropriate resources and an environment that promotes user success and life-long learning.

History/Facility

The present Library opened in January 2002. Named in honor of SF's former President, Dr. Lawrence W. Tyree, the facility is 65,000 square feet and three stories high, with generous space for the collection, leisure seating, quiet study, and media viewing.

A service desk located on each floor is staffed whenever the library is open. The circulation desk is on the first floor, as are reserve materials and a formal conference room. The library conference room may be reserved by any faculty or staff pending availability. Two computer classrooms (seating 68 students total) are located off the main lobby. A café is also located on the first floor. Reference librarians staff a reference desk on the second floor, and reference staff assist patrons at an information desk on the third floor. Reference materials, the print journal collection, eight small study rooms (seating 4-6 students each), three large group study rooms (seating a maximum of 16 students each), circulating media, and Youth and Financial Literacy collections are located on the second floor. In response to user demand, the library designated the microfilm room on the second floor for individual study in Fall 2011.The third floor houses the circulating collection and serves as a quiet study area. There are copy rooms on the first and second floors and media viewing stations in each of the 12 study rooms and in the public seating area of the second floor.

A total of 157 patron access computers are dispersed throughout the building (27 on 1st floor, 36 on 2nd floor, 24 on 3rd floor and 68 in two computer classrooms on the 1st floor). These patron computers ensure access on every floor to the online catalog, databases, Internet, and Microsoft Office software. The library is committed to providing equitable access to library materials, programs, and services to all patrons. All staff working in public service areas of the library will accommodate any reasonable request from a user with a disability. If more assistance is needed than can be provided on demand, users are directed to make an appointment of extended service with a member of the reference staff. The library has two designated computer workstations set up by the Disabilities Resource Center which provide adaptive software programs, scanning, and Internet access to support SF computer users.

The library is open a total of 84 hours, 7 days a week. During the week preceding final exams, the library provides additional extended hours, staying open Friday from 7am until 10pm and Saturday and Sunday from 10 am until 10pm. One of the reference librarians is always on duty to assist users whenever the library is open.

Personnel

The director and all reference librarians hold Masters Degrees in Library and Information Science from accredited universities. The director is an experienced administrator with background in university, special, public, and community college libraries. The reference librarians have a wide range of professional experience and skills. They are classified as faculty and enjoy both the privileges and the responsibilities of that rank.

Every member of the library staff is professional and service-oriented. In the course of accomplishing their jobs, all levels of library staff interact with users and colleagues throughout the Northwest campus and the six Centers. All interactions are characterized by mutual respect and customer service. The entire staff is available to users in person, by phone and email. All contact information is readily accessible from the library website.

Reference Service

All of the librarians routinely provide reference assistance in person, on the phone, via email, by appointment, and via online chat (Ask a Librarian). Each of the six full-time library faculty serves as a liaison to assigned departments, guaranteeing that the collection reflects the academic needs of the college's many programs. The librarians meet with individual teaching faculty on an ongoing basis and attend departmental meetings as schedules permit. The collection development policy is reviewed on an ongoing basis and revised to reflect program needs and college faculty input.

Library Instruction

The librarians teach information literacy sessions in the library and all Centers every semester showing users how to maximize the online and print resources the library provides, and orienting them if needed, to the library. These instruction sessions are tailored to faculty classes and specific assignments. All sessions support SF's Information Literacy learning outcome, defined as the skills necessary to collect, verify, document, and organize information from a variety of sources. The librarians produce tailored lesson plans, online class guides, and worksheets for each session. The sessions may be requested online, on the phone, in email or in person by stopping by the reference desk. The instruction schedule is posted on the library website. The librarians have produced a Faculty Guide to the Library and a Student Guide to the Library. The librarians have also created tutorials, a list of suggested websites, online research guides, bibliographies, and genre reading guides.

Collections

Library users have access to SF's collection comprised of 82,315 unique print titles, 90,158 print volumes, 114 print journals, 117 direct subscription e-journals, 4,844 media titles, 6,548 media volumes and 107 online databases—85% of which are full-text. These databases are topical and include journals and newspapers as well as international resources. Core databases are

purchased on behalf of all 28 college libraries from state appropriations; all library directors collaboratively select the core databases. The relevancy of these databases to SF degree or certificate programs is illustrated by the annotated list the librarians created and posted on the website. All physical collections are easily accessible on open shelves and cataloged using Library of Congress classification and subject headings. The library also maintains a classroom collection of 2,331 films.

All 28 state colleges share the Florida Library Information Network for Community Colleges Library Online Catalog known as LINCCWeb that includes over 4 million books, eBooks, journals, CDs, DVDs, VHS tapes, and audiobooks. Through LINCCWeb, library users share a core collection of 58 databases and 28,649 eBooks collaboratively selected by all library directors and funded centrally by the State. In addition, library users have access to 36,556 eBooks purchased by the library to support the SF curriculum.

In their capacities as department and program liaisons, the reference librarians have ongoing communication with teaching faculty alerting them of new additions in their respective disciplines. Instructors may request additions to the collection by contacting their liaisons, or the reference desk, by email, phone, in person, or by using the online request form.

The reference librarians routinely review the collection in their respective liaison areas for relevance, depth, currency, condition and usage. Librarians annually review and deselect items collaboratively with the teaching faculty in the respective discipline.

The library maintains a collection of 1,134 items in the course reserve collection to support current classes. These items are selected for inclusion by faculty and frequently include textbooks and media. This collection ensures the widest availability of critical items to the broadest range of students in these classes. The circulation staff manages this collection, interfacing with both teaching faculty and students.

Access

The library holdings are accessible through Mango, the statewide discovery tool. This discovery tool is available 24/7 from any computer that has access to the Internet. Databases are available to users 24/7 through SF's portal eSantaFe or through LINCCWeb, and via the library database webpage. Students, faculty and staff may access databases and request items through interlibrary loan using their 8 digit SF ID number. Loan periods are generous and vary by type of user. Individuals may renew items online, by phone, email, in person, or using their My Account feature from within Mango. Users at the Centers may access all online resources, have items sent to them at their Center location, and ask for reference assistance through online chat or by phoning the reference desk.

Interlibrary Loan

SF students enjoy reciprocal borrowing from the collections of all 28 colleges and 12 universities in Florida. In addition, the library has agreements with the two local county libraries in its service district, Alachua County Library District and the Bradford County Public Library. The library has excellent relationships with colleagues in other libraries and traditionally has been a net lender, loaning about twice as many items as it borrows. The library uses the Online Computer Library Center (OCLC) system to borrow from national and international libraries. All costs for ILL service are borne by the library and provided free of charge to all SF students, faculty and staff.

SF users may request ILL items by using the online catalog or by email, phone or in person. The online catalog enables users at the Centers to have materials sent to their Center location. Other libraries may submit ILL requests electronically using OCLC, Aleph, email, or facsimile.

Library Resources for Information Systems Technology

The library provides access to the following resources to supplement course materials:

- Collection of information systems technology books and media that may be borrowed from the library and/or utilized within the library
- Electronic books (eBooks) relating to information systems, accessible via the library catalog
- Print and electronic journals relevant to information systems technology
- Articles from magazines, journals, and newsletters accessible via the library's databases
- Research Guide for Information Systems Technology to assist students in locating information: http://dept.sfcollege.edu/library/library_guides/subject/information_systems_technology/

To ensure that the Information Systems Technology program will have access to bibliographic holdings equivalent to those supporting similar state college programs, SF's library faculty engaged in a benchmarking assessment process. The Information Systems Technology program at Seminole State College (SSC) was found to be similar in demographics and course offerings, so SSC was selected as a benchmark. The SSC library utilizes the same library management system (Aleph) as SF, facilitating parallel comparisons of book collections. Due to the strong technology component of this program, sources were limited to the past five years (2010 to present). Other sources used to gather recommended information systems technology resources for the library included *Resources for College Libraries* online and CHOICE.

The results of the benchmarking analysis are summarized in a comparison chart below. A number of the titles related to more than one Library of Congress subject heading, so they are counted multiple times. Unique titles are totaled at the bottom of the table.

Comparison of SF and SSC Book and eBook Holdings, 2010 - 2015

Subject	SF Print Books	SF eBooks	SF Total	SSC Print Books	SSC eBooks	SSC Total
Android (Electronic resource) / Androids / Droid (Smartphone)	1	44	45	0	2	2
Application program interfaces (Computer software)	1	14	15	1	0	1
BlackBerry (Smartphone)	0	2	2	0	0	0
Business enterprises -- Computer networks	4	5	9	3	1	4
C++ (Computer program language)	4	32	36	5	1	6

Subject	SF Print Books	SF eBooks	SF Total	SSC Print Books	SSC eBooks	SSC Total
CGI (Computer network protocol)	0	1	1	0	0	0
Client/server computing	0	58	58	0	4	4
Cloud computing	6	43	49	7	2	9
Command languages (Computer science)	0	2	2	0	0	0
Computer architecture	1	4	5	1	0	1
Computer input-output equipment	0	1	1	0	0	0
Computer network architectures	0	11	11	0	19	19
Computer network protocols	1	8	9	1	1	2
Computer networks	23	134	157	21	30	51
Computer organization	0	2	2	0	0	0
Computer science -- Mathematics	1	3	4	0	28	28
Computer security	17	74	91	6	10	16
Data compression (Computer science)	0	1	1	0	0	0
Data recovery (Computer science)	0	5	5	0	1	1
Data processing service centers	1	0	1	0	0	0
Data protection	9	13	22	2	7	9
Database management	3	116	119	5	27	32
Database security	0	3	3	0	1	1
Electronic commerce	2	44	46	7	2	9
Electronic data processing -- Distributed processing	0	15	15	2	1	3
Electronic data processing personnel	9	35	44	1	3	4
Extranets (Computer networks)	0	1	1	0	0	0
Firewalls (Computer security)	0	2	2	2	0	2
Graphical user interfaces (Computer systems)	2	4	6	0	0	0
Information networks	1	2	3	1	9	10
Information resources management	2	12	14	3	0	3
Information technology -- Management	2	47	49	6	4	10

Subject	SF Print Books	SF eBooks	SF Total	SSC Print Books	SSC eBooks	SSC Total
Information technology projects	2	5	7	0	0	0
Information technology -- Security measures	2	2	4	0	1	1
Internet telephony	0	8	8	2	0	2
Internetworking (Telecommunication)	4	4	8	2	3	5
Intranets (Computer networks)	0	29	29	0	3	3
iOS (Electronic resource)	1	28	29	1	0	1
iPad (Computer) -- Programming	2	16	18	1	1	2
iPhone (Smartphone) -- Programming	2	25	27	1	3	4
Java (Computer program language)	4	69	73	2	2	4
Linux / Ubuntu / Debian	3	27	30	1	1	2
Local area networks (Computer networks)	0	0	0	1	0	1
Mac OS	1	20	21	4	3	7
Memory management (Computer science)	1	0	1	0	1	1
Microsoft Windows (Computer file)	6	43	49	7	3	10
Mobile commerce	1	5	6	1	1	2
Mobile computing	6	91	97	7	12	19
Network analysis (Planning)	0	2	2	0	1	1
Network performance (Telecommunication)	0	5	5	0	2	2
Object-oriented programming (Computer science)	3	24	27	3	1	4
Object-oriented programming languages	0	7	7	1	0	1
Objective-C (Computer program language)	4	7	11	0	1	1
Operating systems (Computers)	7	96	103	11	11	22
Penetration testing (Computer security)	0	9	9	0	0	0
Project management*	5	73	78	1	11	12

Subject	SF Print Books	SF eBooks	SF Total	SSC Print Books	SSC eBooks	SSC Total
Project management -- Computer programs	0	10	10	1	2	3
Random access memory	1	0	1	1	0	1
Raspberry Pi (Computer)	1	10	11	0	0	0
Relational databases	2	29	31	1	9	10
Routers (Computer networks)	0	3	3	0	0	0
Sensor networks	0	3	3	0	1	1
Service oriented architecture (Computer science)	0	18	18	0	2	2
Smartphones -- Programming	3	43	46	1	0	1
SQL server	0	34	34	1	4	5
System analysis	0	4	4	0	2	2
Systems migration	0	2	2	0	0	0
Tablet computers	9	20	29	1	2	3
TCP/IP (Computer network protocol)	1	3	4	0	1	1
UNIX (Computer file)	0	3	3	0	0	0
User interfaces (Computer systems)	4	16	20	1	1	2
Virtual computer systems	0	37	37	0	2	2
Web servers -- management	0	5	5	0	0	0
Wide area networks (Computer networks)	0	1	1	0	0	0
Windows phone (Computer file)	0	10	10	0	0	0
Wireless LANs	0	8	8	1	6	7
Wireless sensor networks	0	2	2	0	1	1
Total	165	1,594	1,759	128	247	375
Total Unique Titles	95	1,040	1,135			

**Due to the varying discipline-specific books on project management, only titles that were considered relevant to the IST degree were counted and listed.*

The full title list for Santa Fe's print holdings is included in Appendix A. The full title list for Santa Fe's eBook holdings is included in Appendix B.

In addition to existing holdings, library faculty identified new resources to support the Information Systems Technology program that were purchased from 2013-2015. A list of these

resources can be found in Appendix C. Further analysis was made of titles to be bought in the 2015-2016 fiscal year. A list of these resources can be found in Appendix D.

As this chart illustrates, students within SF's baccalaureate program will have access to book holdings comparable to those accessed by their peers.

The library subscribes to many databases that include full-text articles from journals and magazines that support the Information Systems Technology program. Of these databases, four were selected that best support this program. The table below summarizes the number of full text journals and magazines within these databases that specifically support the proposed curriculum. Both the number of peer-reviewed sources and the total number of sources are given. Since many of these journals are offered with a delay (e.g., the most recent 12 months are not available), the numbers available without delay are listed separately. Across all the relevant databases, students would have access to 12,608 unique periodicals of which 509 are peer-reviewed for scientific and research rigor, as shown below. 1,231 titles are offered without delay. This program does not have a heavy research component, focusing instead on hands-on experience.

Database Name	# of titles	# of titles: peer- reviewed	# of titles: no delay
Academic Search Complete	111	68	35
Associates Programs Source Plus	156	52	80
Computer Database	11,756	285	770
General OneFile	585	104	346
Total	**12,608**	**509**	**1,231**

Appendices

A. Existing Print Book Titles, 2010-2015
B. Existing eBook Titles, 2010-2015
C. Titles Added To Support Program, 2013-2015
D. Titles to Be Added During the 2015-2016 Fiscal Year

Appendix A: Existing Book Titles, 2010-2015

Title	Subject(s)	Year
Basics of Computer Networking	Computer networks	2012
Borderless Economics: Chinese Sea Turtles, Indian Fridges and the New Fruits of Global Capitalism	Information networks	2011
CCNA Certification All-in-One for Dummies	Computer networks; Internetworking (Telecommunication); Electronic data processing personnel	2010
CCNA: Routing and Switching: Study Guide	Computer networks; Electronic data processing personnel	2013
The CERT Guide to Insider Threats: How to Prevent, Detect, and Respond to Information Technology Crimes (Theft, Sabotage, Fraud)	Computer networks -- Security measures; Data protection; Information technology -- Security measures	2012
Cisco CCENT/CCNA ICND1 100-101 Official Cert Guide	Computer networks; Internetworking (Telecommunication); Electronic data processing personnel	2013
Cisco CCNA Routing and Switching ICND2 200-101 Official Cert Guide	Computer networks; Internetworking (Telecommunication); Electronic data processing personnel	2013
Cloud Computing: Concepts, Technology, & Architecture	Cloud computing	2013
Cloud Computing: Web-Based Dynamic IT Services	Cloud computing	2011
Cloud Management and Security	Cloud computing; Computer security	2014
Complete CompTIA A+ Guide to PCs	Computer networks	2013
CompTIA A+ Certification Exam Guide: Exams 220-801 & 220-802	Electronic data processing personnel	2012
CompTIA Network+ Exam Guide (Exam N10-005)	Computer networks	2012
Computer Network Security and Cyber Ethics	Computer networks	2014
Connecting Networks Companion Guide	Computer networks	2014
The Creative Destruction of Medicine: How the Digital Revolution Will Create Better Health Care	Information resources management	2012
Cyber Security Management: A Governance, Risk and Compliance Framework	Business enterprises -- Computer networks -- Security measures; Computer security	2014

Cyber Self-Defense: Expert Advice to Avoid Online Predators, Identity Theft, and Cyberbullying	Computer security	2014
Cyber Warfare: How Conflicts in Cyberspace are Challenging America and Changing the World	Computer security	2013
The Death of the Internet	Data protection; Electronic commerce	2012
Designing Interfaces	Application program interfaces (Computer software); Graphical user interfaces (Computer systems); User interfaces (Computer systems)	2011
Designing the User Interface: Strategies for Effective Human-Computer Interaction	User interfaces (Computer systems)	2010
Digital Design Essentials: 100 Ways to Design Better Desktop, Web, and Mobile Interfaces	User interfaces (Computer systems)	2013
A Down-To-Earth Guide To SDLC Project Management	Project management	2013
Effective Modern C++: 42 Specific Ways to Improve Your Use of C++11 and C++14	C++ (Computer program language)	2014
Elements of Computer Networking: An Integrated Approach	Computer networks	2014
Elements of Computer Security	Computer networks; Computer security	2010
Expert Resumes for Computer and Web Jobs	Electronic data processing personnel	2011
Final Jeopardy: Man vs. Machine and the Quest to Know Everything	Database management	2011
The Garbage Collection Handbook: The Art of Automatic Memory Management	Memory management (Computer science)	2012
Getting Started with Raspberry Pi	Linux; Programming languages (Electronic computers); Raspberry Pi (Computer)	2014
Going Mobile: Developing Apps for Your Library Using Basic HTML Programming	Smartphones -- Programming; Mobile computing	2012
Green Computing: Tools and Techniques for Saving Energy, Money, and Resources	Cloud computing; Data processing service centers; Tablet computers	2014
Guide To Computer Network Security	Computer networks -- Security measures	2013
Guide to Java: A Concise Introduction to Programming	Java (Computer program language)	
Guide to OSI and TCP/IP Models	Computer networks; TCP/IP (Computer network protocol)	2014

Hackers and Hacking: A Reference Handbook	Computer security	2013
Hacking the Future: Privacy, Identity, and Anonymity on the Web	Computer security	2012
The Handbook of Personal Area Networking Technologies and Protocols	Computer network protocols	2013
Head First C	C++ (Computer program language)	2012
Healthcare Information Technology Exam Guide for CompTIA Healthcare IT Technician and Health HIT Pro Certifications	Electronic data processing personnel	2013
Hello, Android: Introducing Google's Mobile Development Platform	Android (Electronic resource); Mobile computing	2010
How Linux Works: What Every Superuser Should Know	Linux; Operating systems (Computers)	2015
How to Do Everything: iCloud	iOS (Electronic resource); Cloud computing; Mac OS	2012
How to Do Everything: iPad	Tablet computers	2010
How to Do Everything: iPad 2	Tablet computers	2011
How to Do Everything Kindle Fire	Tablet computers	2012
How To Do Everything: Windows 8	Microsoft Windows (Computer file); Operating systems (Computers)	2013
The Information Diet: A Case for Conscious Consumption	Information resources management; Information technology -- Management	2012
Information Security Fundamentals	Computer security; Data protection	2014
Interactive Design: An Introduction to the Theory and Application of User-Centered Design	System design; User interfaces (Computer systems)	2012
Introduction to Computer and Network Security: Navigating Shades of Gray	Computer networks -- Security measures; Computer security; Data protection	2014
Introduction to Computer Networks and Cybersecurity	Computer networks -- Security measures	2013
Introduction to Information Security: A Strategic-Based Approach	Computer networks -- Security measures; Computer security	2014
iPad 2	Tablet computers	2011
iPad: The Missing Manual	Tablet computers	2010
iPhone and iPad Apps for Absolute Beginners	iPhone (Smartphone) -- Programming; iPad (Computer) -- Programming	2010
IT Project Management: On Track from Start to Finish	Information technology -- Management; Information technology projects; Project management	2010

Java for Everyone	Java (Computer program language)	2010
JavaFX: A Beginner's Guide	Java (Computer program language); Graphical user interfaces (Computer systems)	2011
Kindle Fire Quicksteps	Tablet computers	2012
Learning PHP, MySQL & JavaScript: With jQuery, CSS & HTML5	Relational databases	2014
Managing the Unmanageable: Rules, Tools, and Insights for Managing Software People and Teams	Information technology projects; Electronic data processing personnel; Project management	2013
Microsoft Office Access 2010	Database management	2010
Microsoft Windows Networking Essentials	Computer networks; Internetworking (Telecommunication); Microsoft Windows (Computer file)	2011
The Mobile Wave: How Mobile Intelligence Will Change Everything	Mobile computing	2012
Mobile Web Design for Dummies	Mobile computing	2010
Object-Oriented Data Structures Using Java	Object-oriented programming (Computer science); Java (Computer program language)	2012
Objective-C and IOS Programming: A Simplified Approach	Objective C (Computer program language); iPad (Computer) -- Programming; iPhone (Smartphone) -- Programming	2014
Objective-C Programming: The Big Nerd Ranch Guide	Objective C (Computer program language)	2013
Office 2010: The Missing Manual	Database management; Relational databases	2010
Online Privacy: A Reference Handbook	Data protection	2011
Peopleware: Productive Projects and Teams	Project management	2013
A Practical Guide to Linux Commands, Editors, and Shell Programming	Linux; Operating systems (Computers)	2010
Privacy, Information, and Technology	Data protection	2011
Pro Objective-C	Object oriented programming (Computer science); Objective C (Computer program language)	2013
Programming for Engineers: A Foundational Approach to Learning C and Matlab	C++ (Computer program language)	2012

Programming in Objective-C	Macintosh (Computer) -- Programming; Object oriented programming (Computer science); Objective C (Computer program language)	2013
Project Management for Engineering and Technology	Project management	2015
Protecting Your Health Privacy: A Citizen's Guide to Safeguarding the Security of Your Medical Information	Data protection	2011
Real-time C++: Efficient Object-Oriented and Template Micro-Controller Programming	C++ (Computer program language)	2013
Responsive Security: Be Ready to Be Secure	Business enterprises -- Computer networks -- Security measures; Information technology -- Security measures; Data protection	2014
Secret History: The Story of Cryptology	Computer security	2013
Security Basics for Computer Architects	Computer architecture; Computer security	2013
Sets, Logic and Maths for Computing	Computer science -- Mathematics	2012
The Social Media Bible: Tactics, Tools, and Strategies for Business Success	Electronic commerce	2010
Streaming: Movies, Media, and Instant Access	Business enterprises -- Computer networks	2013
The Third Screen: Marketing to Your Customers in a World Gone Mobile	Business enterprises -- Computer networks; Mobile commerce; Smartphones	2011
To the Cloud: Big Data in a Turbulent World	Cloud computing	2014
Turing's Cathedral: The Origins of the Digital Universe	Random access memory	2012
Unauthorized Access: The Crisis in Online Privacy and Security	Computer security; Data protection	2014
Windows 7: The Missing Manual	Operating systems (Computers); Microsoft Windows (Computer file)	2010
Windows 8 for Dummies	Operating systems (Computers); Microsoft Windows (Computer file)	2012
Windows 8 Simplified	Operating systems (Computers); Microsoft Windows (Computer file)	2012
Windows 8: The Missing Manual	Operating systems (Computers); Microsoft Windows (Computer file)	2013

Appendix B: Existing eBook Titles, 2010-2015

Title	Subject(s)	Year
3D Math Primer for Graphics and Game Development	Computer science -- Mathematics	2012
20:20 Project Management: How to Deliver on Time, on Budget and on Spec	Project management	2012
24 Deadly Sins of Software Security: Programming Flaws and How to Fix Them	Computer security; Computer networks	2010
30 Days to Virtual Productivity Success: The 30-Day Results Guide to Making the Most of Your Time, Expanding Your Contacts, and Growing Your Business	Information technology -- Management	2012
101 Project Management Problems and How to Solve Them: Practical Advice for Handling Real-World Project Challenges	Project management	2010
101 Tips for Making Money Online	Electronic commerce	2014
Absolute OpenBSD: Unix for the Practical Paranoid	Operating systems (Computers); UNIX (Computer file)	2013
Access 2010 Bible	Database management	2010
Access 2013 All-in-One for Dummies	Database management	2013
Access 2013 Bible: The Comprehensive Tutorial Resource	Database management	2013
Access 2013 for Dummies	Database management	2013
Access Solutions: Tips, Tricks, and Secrets from Microsoft Access MVPs	Database management	2010
Achieving Service-Oriented Architecture: Applying an Enterprise Architecture Approach	Information technology -- Management; Service oriented architecture (Computer science)	2010
ActionScript Graphing Cookbook: Learn How to Create Appealing and Interactive Visual Presentations of Your Data in ActionScript	Object oriented programming (Computer science)	2012
ADempiere 3.6 Cookbook: Over 100 Recipes for Extending and Customizing ADempiere Beyond Its Standard Capabilities	Information resources management	2011
Administering vSphere 5: Planning, Implementing, and Troubleshooting	Operating systems (Computers); Virtual computer systems	2013
Advanced iOS 4 Programming: Developing Mobile Applications for Apple iPhone, iPad, and iPod Touch	iPhone (Smartphone) -- Programming; iPad (Computer) -- Programming; Mobile computing	2010

Title	Subject(s)	Year
Advanced Java EE Development for Rational Application Developer 7.5: Developers' Guidebook	Java (Computer program language)	2011
Advanced Operating Systems and Kernel Applications: Techniques and Technologies	Operating systems (Computers)	2010
Advances in Network Architecture	Computer network architectures	2012
Adventures in Raspberry Pi	Operating systems (Computers); Raspberry Pi (Computer)	2014
Agile Practices for Waterfall Projects: Shifting Processes for Competitive Advantage	Project management	2013
Agile Project Management with GreenHopper 6 Blueprints	Project management	2013
Akka Essentials	Java (Computer program language)	2012
Alcatel-Lucent Network Routing Specialist II (NRS II) Self-Study Guide: Preparing for the NRS II Certification Exams	Computer networks; Electronic data processing personnel	2011
Alfresco 3 Business Solutions	Database management; Information resources management	2011
Alfresco 3 Cookbook: Over 70 Recipes for Implementing the Most Important Functionalities of Alfresco	Operating systems (Computers)	2011
Alfresco 3 Records Management: Comply with Regulations and Secure Your Organization's Records with Alfresco Records Management	Database management; Information resources management	2011
Alfresco 3 Web Content Management: Enterprise Web Content Management Made Easy and Affordable	Information resources management; Database management	2010
Alfresco 3 Web Services: Build Alfresco Applications Using Web Services, Web Scripts and CMIS	Information resources management; Database management	2010
Alfresco Share	Database management	2012
The AMA Handbook of Project Management (3rd ed.)	Project management	2010
Amazon Web Services for Dummies	Cloud computing	2013

Title	Subject(s)	Year
AndEngine for Android Game Development Cookbook: Over 70 Highly Effective Recipes with Real-World Examples to Get to Grips with the Powerful Capabilities of AndEngine and GLES 2	Android (Electronic resource)	2013
Android App Inventor for the Absolute Beginner	Droid (Smartphone)	2014
Android Application Development Cookbook: 93 Recipes for Building Winning Apps	Android (Electronic resource)	2012
Android Application Development for Dummies	Android (Electronic resource)	2012
Android Application Programming with OpenCV: Build Android Apps to Capture, Manipulate, and Track Objects in 2D and 3D	Android (Electronic resource)	2013
Android Application Testing Guide: Build Intensively Tested and Bug Free Android Applications	Android (Electronic resource); Mobile computing	2011
Android Development Tools for Eclipse	Android (Electronic resource)	2013
Android Development with Flash: Your Visual Blueprint for Developing Mobile Apps	Android (Electronic resource); Mobile computing	2010
Android 4: New Features for Application Development; Develop Android Applications Using the New Features of Android Ice Cream Sandwich	Android (Electronic resource)	2012
Android Fully Loaded	Android (Electronic resource); Mobile computing	2011
Android Game Programming for Dummies	Androids	2013
Android Hacker's Handbook	Android (Electronic resource)	2014
Android Native Development Kit Cookbook	Android (Electronic resource)	2013
Android NDK: Discover the Native Side of Android and Inject the Power of C/C++ in Your Applications: Beginner's Guide	Android (Electronic resource); C++ (Computer program language)	2012
Android Phones for Dummies	Android (Electronic resource); Mobile computing; Smartphones	2014

Title	Subject(s)	Year
Android Programming: Pushing the Limits	Android (Electronic resource); Smartphones -- Programming; Tablet computers -- Programming	2014
Android Security Cookbook	Android (Electronic resource); Operating systems (Computers) -- Security measures; Smartphones -- Security measures	2013
Android Security Internals: An In-Depth Guide to Android's Security Architecture	Android (Electronic resource); Mobile computing; Operating systems (Computers); Smartphones	2015
Android Studio Application Development	Android (Electronic resource)	2013
Android Tablets for Dummies	Android (Electronic resource); Mobile computing; Tablet computers	2014
Android 3.0 Application Development Cookbook: Over 70 Working Recipes Covering Every Aspect of Android Development	Android (Electronic resource); Mobile computing; Smartphones -- Programming	2011
Android User Interface Development: Beginner's Guide; Quickly Design and Develop Compelling User Interfaces for Your Android Applications	Android (Electronic resource); Androids; User interfaces (Computer systems)	2011
Apache CloudStack Cloud Computing: Leverage the Power of CloudStack and Learn to Extend the CloudStack Environment	Cloud computing	2013
Apache Mahout Cookbook	Jave (Computer program language)	2013
Apache Maven 3 Cookbook: Over 50 Recipes Towards Optimal Java Software Engineering with Maven 3	Project management -- Computer programs; Java (Computer program language)	2011
Apache Maven Dependency Management	Jave (Computer program language)	2013
Apache Wicket Cookbook: Master Wicket by Example by Implementing Real-Life Solutions to Everyday Tasks	Java (Computer program language); Object oriented programming (Computer science)	2011
App Inventor for Android: Build Your Own Apps-- No Experience Required!	Android (Electronic resource); Smartphones -- Programming; Mobile computing	2011

Title	Subject(s)	Year
Appcelerator Titanium Application Development by Example Beginner's Guide: Over 30 Interesting Recipes to Help You Create Cross-Platform Apps with Titanium, and Explore the New Features in Titanium 3	Android (Electronic resource); Mobile computing -- Programming; iOS (Electronic resource)	2013
Appcelerator Titanium Business Application Development Cookbook	Mobile computing	2013
Application Development with Parse Using iOS SDK	iPhone (Smartphone) -- Programming	2013
Applied Architecture Patterns on the Microsoft Platform: An In-Depth, Scenario-Driven Approach to Architecting Systems Using Microsoft Technologies	SQL server	2010
Applied Oracle Security: Developing Secure Database and Middleware Environments	Computer security	2010
Aptana Studio Beginner's Guide: Develop Web Applications Effectively with the Aptana Studio 3 IDE	Virtual computer systems	2013
Architecture of Network Systems	Computer network architectures	2011
Arquillian Testing Guide: Get Familiarized with the Arquillian Framework and Its Capabilities to Carry Out Integration and Functional Testing on a Java Virtual Machine	Java (Computer program language)	2013
ASP.NET Web API: Build RESTful Web Applications and Services on the .NET Framework: Master ASP.NET Web API Using .NET Framework 4.5 and Visual Studio 2013	Application program interfaces (Computer software)	2013
Asynchronous Android	Android (Electronic resource); Mobile computing	2013
Augmented Reality for Android Application Development	Android (Electronic resource); Mobile computing; User interfaces (Computer systems)	2013
Augmented Reality Using Appcelerator Titanium Starter	Smartphones -- Programming	2012
Automating Sharepoint 2010 with Windows Powershell 2.0	Intranets (Computer networks)	2011
Autotools: A Practitioner's Guide to GNU Autoconf, Automake, and Libtool	UNIX (Computer file)	2010

Title	Subject(s)	Year
Avid Media Composer 6.x Cookbook: Over 160 Highly Effective and Practical Recipes to Help Beginning and Intermediate Users Get the Most from Avid Media Composer 6 Editing	Project management -- Computer programs	2012
BackTrack: Testing Wireless nNetwork Security	Computer networks	2013
BackTrack 4: Assuring Security by Penetration Testing: Master the Art of Penetration Testing with BackTrack	Penetration testing (Computer security); Computer networks; Computer security	2011
BackTrack 5 Cookbook: Over 80 Recipes to Execute Many of the Best Known and Little Known Penetration Testing Aspects of BackTrack 5	Penetration testing (Computer security)	2013
BackTrack 5 Wireless Penetration Testing: Beginner's Guide: Master Bleeding Edge Wireless Testing Techniques with BackTrack 5	Computer networks; Penetration testing (Computer security)	2011
Basecamp for Beginners: Managing Projects and Keeping Track of Details	Project management -- Computer programs	2014
Beginning Android 4 Application Development	Android (Electronic resource); Mobile computing	2012
Beginning Android Application Development	Android (Electronic resource); Mobile computing	2011
Beginning Android Tablet Application Development	Android (Electronic resource); Tablet computers	2011
Beginning C++ Through Game Programming	C++ (Computer program language)	2010
Beginning iOS Application Development with HTML and JavaScript	iPhone (Smartphone) -- Programming; iPad (Computer) -- Programming	2012
Beginning iOS Game Development	iPhone (Smartphone) -- Programming; iPad (Computer) -- Programming	2012
Beginning iOS Programming: Building and Deploying iOS Applications	iOS (Electronic resource); iPad (Computer) -- Programming; iPhone (Smartphone) -- Programming	2014
Beginning iOS Programming for Dummies	Mobile computing; iOS (Electronic resource); iPad (Computer) -- Programming; iPhone (Smartphone) -- Programming	2014
Beginning iPad Application Development	Mobile computing; Objective-C (Computer program language)	2010

Title	Subject(s)	Year
Beginning iPhone SDK Programming with Objective-C	iPhone (Smartphone) -- Programming; Objective-C (Computer program language)	2010
Beginning Java SE 6 Game Programming	Java (Computer program language)	2012
Beginning Mac OS X Snow Leopard Programming	Mac OS	2013
Beginning Microsoft SQL Server 2012 Programming	Client/server computing; SQL server	2012
Beginning Objective-C	Objective C (Computer program language)	2012
Beginning Programming with C for Dummies	C++ (Computer program language)	2014
Beginning Programming with C++ for Dummies	C++ (Computer program language); Object-oriented programming languages	2010
Beginning Programming with Java for Dummies	Java (Computer program language)	2014
Beginning SharePoint 2010 Administration: Microsoft SharePoint Foundation 2010 and Microsoft SharePoint Server 2010	Intranets (Computer networks)	2010
Beginning SharePoint 2010: Building Business Solutions with SharePoint	Intranets (Computer networks)	2011
Beginning SharePoint 2013: Building Business Solutions	Intranets (Computer networks)	2013
Beginning SharePoint 2013 Development	Intranets (Computer networks)	2013
Beginning Visual C# 2010	C++ (Computer program language)	2010
Beginning Windows 8 Application Development	Microsoft Windows (Computer file)	2012
Beginning Windows Phone 7 Application Development: Building Windows Phone Applications using Silverlight and XNA	Windows phone (Computer file)	2011
Benefits Management: How to Increase the Business Value of Your IT Projects	Information technology -- Management	2012
Black Hat Python: Python Programming for Hackers and Pentesters	Computer security	2015
BlackBerry Enterprise Server 5 Implementation Guide: Simplify the Implementation of BlackBerry Enterprise Server for Microsoft Exchange in Your Corporate Environment	Mobile computing; BlackBerry (Smartphone)	2011

Title	Subject(s)	Year
BlackBerry Java Application Development: Beginner's Guide: Build and Deploy Powerful, Useful, and Professional Java Mobile Applications for BlackBerry Smartphones, the Fast and Easy Way	BlackBerry (Smartphone); Smartphones -- Programming	2010
Blog, Podcast, Google, Sell: The Complete Guide to Making Online Profit	Electronic commerce	2011
The Book of PF: A No-Nonsense Guide to the OpenBSD Firewall	Firewalls (Computer security); TCP/IP (Computer network protocol)	2011
The Book of Ruby: A Hands-On Guide for the Adventurous	Object oriented programming (Computer science)	2011
Boost.Asio C++ Network Programming: Enhance Your Skills with Practical Examples for C++ Network Programming	C++ (Computer program language); Computer networks; Object oriented programming (Computer science)	2013
Boost C++ Application Development Cookbook	C++ (Computer program language)	2013
Break Free with DB2 9.7: A Tour of Cost-Slashing New Features	Database management; Relational dabatabases	2010
A Bug Hunter's Diary: A Guided Tour Through the Wilds of Software Security	Computer security	2011
Building Dependable Distributed Systems	Electronic data processing -- Distributed processing	2014
Building E-commerce Sites with Drupal Commerce Cookbook	Electronic commerce	2013
Building E-commerce sites with VirtueMart Cookbook: Over 90 Recipes to Help You Build an Attractive, Profitable, and Fully-Featured E-commerce Store with VirtueMart	Electronic commerce	2013
Building Performance Dashboards and Balanced Scorecards with SQL Server Reporting Services	Client/server computing; Database management	2014
Building the Internet of Things (IoT) with IPv6 and MIPv6	Mobile computing; TCP/IP (Computer network protocol)	2013
Building UIs with Wijmo: Build User Interfaces Quickly Using Widgets	User interfaces (Computer systems)	2013

Title	Subject(s)	Year
Business Intelligence Cookbook: A Project Lifecycle Approach Using Oracle technology: Over 80 Quick and Advanced Recipes That Focus on Real-World Techniques and Solutions to Manage, Design, and Build Data Warehouse and Business Intelligence Projects	Database management; Relational databases	2012
Business Models for the Social Mobile Cloud: Transform Your Business Using Social Media, Mobile Internet, and Cloud Computing	Information technology -- Management; Cloud computing	2013
Business Transformation: A Roadmap for Maximizing Organizational Insights	Information technology -- Management	2014
C++ Application Development with Code:Blocks	C++ (Computer program language)	2013
C#: A Beginner's Tutorial	C++ (Computer program language); Object oriented programming (Computer science)	2013
C# 4.0: The Complete Reference	C++ (Computer program language)	2010
C# 5.0 All-in-One for Dummies	C++ (Computer program language); Object oriented programming languages	2013
C# 5 First Look: Write Ultra Responsive Applications Using the New Asynchronous Features of C#	C++ (Computer program language); Object oriented programming languages	2013
Cabling: The Complete Guide to Copper and Fiber-Optic Networking	Computer networks	2014
CASP: CompTIA Advanced Security Practitioner Study Guide (Exam CAS-001)	Computer security; Computer networks; Electronic data processing personnel	2012
CCENT Study Guide Exam: 100-101 (ICND1)	Computer networks; Electronic data processing personnel	2013
CCNA Certification All-in-One for Dummies	Computer networks; Electronic data processing personnel; Routers (Computer networks)	2010
CCNA Routing and Switching Review Guide: Exams 100-101, 200-101, and 200-120	Electronic data processing personnel; Routers (Computer networks)	2014
CCNA: Routing and Switching: Study Guide: Exams 100-101, 200-101, and 200-120	Computer networks; Electronic data processing personnel; Routers (Computer networks)	2013

Title	Subject(s)	Year
CCNA Security Study Guide: IINS Exam 640-553	Computer networks	2010
CCNA Voice: Study Guide	Internet telephony	2010
CCNA Wireless Study Guide (IUWNE 640-721)	Wireless LANs	2010
CEH: Certified Ethical Hacker Study Guide	Computer security; Computer networks; Electronic data processing personnel	2010
CentOS 6 Linux Server Cookbook: A Practical Guide to Installing, Configuring, and Administering the CentOS Community-Based Enterprise Server	Linux; Operating systems (Computers)	2013
Cinder-- Begin Creative Coding: A Quick Introduction Into the World of Creative Coding with Cinder Through Basic Tutorials and a Couple of Advanced Examples	C++ (Computer program language)	2013
Cinder Creative Coding Cookbook: Create Compelling Animations and Graphics with Kinect and Camera Input, Using One of the Most Powerful C++ Frameworks Available	C++ (Computer program language)	2013
CISA: Certified Information Systems Auditor Study Guide	Computer security; Computer networks	2011
Cisco Unified Communications Manager 8: Expert Administration Cookbook: Over 110 Advanced Recipes to Effectively and Efficiently Configure and Manage Cisco Unified Communications Manager	Internet telephony	2012
CISSP for Dummies	Computer security; Electronic data processing personnel; Computer networks	2012
CISSP: Certified Information Systems Security Professional Study Guide	Computer security; Computer networks; Electronic data processing personnel	2012
Citrix Access Gateway VPX 5.04 Essentials: A Practical Step-by-Step Guide to Provide Secure Remote Access Using the Citrix Access Gateway VPX	Client/server computing; Computer security	2013

Title	Subject(s)	Year
Citrix XenDesktop 5.6 Cookbook: Implement a Fully Featured XenDesktop 5.6 Architecture in a Rich and Powerful VDI Experience Configuration	Virtual computer systems; Computer networks	2013
Citrix XenDesktop 7 Cookbook	Client/server computing	2014
Citrix XenServer 6.0 Administration Essential Guide: Deploy and Manage XenServer in Your Enterprise to Create, Integrate, Manage, and Automate a Virtual Datacenter Quickly and Easily	Computer organization; Virtual computer systems	2012
Click Millionaires: Work Less, Live More with an Internet Business You Love	Electronic commerce	2012
Cloning Internet Applications with Ruby: Make Your Own TinyURL, Twitter, Flickr, or Facebook Using Ruby	Object oriented programming (Computer science)	2010
Cloud Computing Bible	Cloud computing	2011
Cloud Computing: A Practical Approach	Cloud computing	2010
Cloud Essentials: CompTIA Authorized Courseware for Exam CLO-001	Cloud computing	2013
Cloud Security: A Comprehensive Guide to Secure Cloud Computing	Cloud computing; Computer security	2010
The Cloud: Understanding the Security, Privacy and Trust Challenges	Cloud computing; Computer security	2011
CMS Security Handbook: The Comprehensive Guide for WordPress, Joomla!, Drupal, and Plone	Computer networks -- Security measures; Data protection	2011
CNNA: Cisco Certified Network Associate Review Guide	Computer networks	2011
Cocoa	Object-oriented programming (Computer science); Application program interfaces (Computer software); Mac OS	2010
Cocoa and Objective-C Cookbook: Move Beyond Basic Cocoa Development Using Over 70 Simple and Effective Recipes for Mac OS X Development	Application program interfaces (Computer software); C++ (Computer program language); Mac OS; Object oriented programming (Computer science); Operating systems (Computers)	2011

Title	Subject(s)	Year
Cocos2d for iPhone 0.99: Beginner's Guide: Make Mind-Blowing 2D Games for iPhone with This Fast, Flexible, and Easy-to-Use Framework!	iPhone (Smartphone) -- Programming	2010
Cocos2d-x by Example Beginner's Guide: Make Fun Games for Any Platform Using C++, Combined with One of the Most Popular Open Source Frameworks in the World	C++ (Computer program language)	2013
Collaborative Computer Security and Trust Management	Computer security; Computer networks; Data protection	2010
Communicating Process Architectures 2011: WoTUG-33: Proceedings of the 33rd WoTUG Technical Meeting, 19-22 June 2011, University of Limerick, Ireland	Computer architecture	2011
Communicating Projects: An End-to-End Guide to Planning, Implementing and Evaluating Effective Communication	Project management	2013
Communicating the User Experience: A Practical Guide for Creating Useful UX Documentation	User interfaces (Computer systems)	2011
Complete OS X Mavericks	Operating systems (Computers); Mac OS	2014
The Complete Reference Star Schema	Relational databases	2010
Complex Networks: Structure, Robustness, and Function	System analysis	2010
CompTIA A+ Complete : Review Guide	Electronic data processing personnel	2012
CompTIA Linux+ Study Guide: Exams LX0-101 and LX0-102	Linux; Operating systems (Computers); Electronic data processing personnel	2010
CompTIA Network+ Exam Guide (Exam N10-005)	Computer networks; Electronic data processing personnel	2012
CompTIA Network+ N10-005 in Depth	Computer networks	2013
CompTIA Network+ Review Guide: Exam N10-005	Computer networks; Electronic data processing personnel	2013
CompTIA Project+ Study Guide (PK0-003)	Information technology -- Management; Electronic data processing personnel; Project management	2010

Title	Subject(s)	Year
CompTIA Security+ Deluxe Study Guide	Computer networks; Computer security; Electronic data processing personnel	2011
Computer Communication for Metropolitan and Wide Area Networks	Computer networks; Wide area networks (Computer networks)	2010
Computer Forensics Jumpstart	Computer security; Computer networks	2011
Computing with Windows 7 for the Older and Wiser: Get Up and Running on Your Home PC	Operating systems (Computers); Microsoft Windows (Computer file)	2010
The Concise Prince2: A Pocket Guide	Project management	2013
Confessions of a Successful CIO: How the Best CIOs Tackle Their Toughest Business Challenges	Information technology -- Management	2014
Content is Currency: Developing Powerful Content for Web and Mobile	Electronic commerce	2011
Core Data iOS Essentials: A Fast-Paced, Example-Driven Guide to Data-Driven iPhone, iPad, and iPod Touch Applications	iOS (Electronic resource); iPad (Computer) -- Programming; iPhone (Smartphone) -- Programming	2011
CouchDB and PHP Web Development Beginner's Guide: Get Your PHP Application from Conception to Deployment by Leveraging CouchDB's Robust Features	Database management	2012
Creating Business Agility: How Convergence of Cloud, Social, Mobile, Video, and Big Data Enables Competitive Advantage	Information technology -- Management	2014
Creating Concrete5 Themes: Create High Quality Concrete5 Themes Using Practical Recipes and Responsive Techniques to Make It Mobile-Ready	Java (Computer program language)	2013
Creating Dynamic UI with Android Fragments: Leverage the Power of Android Fragments to Develop Dynamic User Interfaces for Your Apps	Android (Electronic resource); Mobile computing	2013

Title	Subject(s)	Year
Creating Mobile Apps with jQuery Mobile: Learn to Make Practical, Unique, Real-World Sites That Span a Variety of Industries and Technologies With the World's Most Popular Mobile Development Library	Mobile computing	2013
Creating Mobile Apps with Sencha Touch 2	Mobile computing	2013
Creative Project Management: Innovative Project Options to Solve Problems on Time and Under Budget	Project management	2010
CRM at the Speed of Light: Social CRM Strategies, Tools, and Techniques for Engaging Your Customers	Electronic commerce	2010
CWAP: Certified Wireless Analysis Professional Official Study Guide	Wireless LANs	2011
CWTS Certified Wireless Technology Specialist Study Guide (Exam PW0-070)	Wireless LANs	2010
Cyber Law and Cyber Security in Developing and Emerging Economies	Computer security; Computer networks	2010
Cybersecurity: Managing Systems, Conducting Testing, and Investigating Intrusions	Computer networks -- Security measures	2014
A Cyberworm That Knows No Boundaries	Computer networks -- Security measures; Computer security	2011
Data Analysis with Microsoft Access 2010: From Simple Queries to Business Intelligence	Database management	2012
Data Crush: How the Information Tidal Wave is Driving New Business Opportunities	Information technology -- Management	2014
Data-Driven Security: Analysis, Visualization and Dashboards	Computer security	2014
Data Protection for Virtual Data Centers	Data protection; Virtual computer systems	2010
Data Storage Networking: Real World Skills for the CompTIA Storage+TM Certification	Database management	2014
Dear Hacker: Letters to the Editor of 2600	Computer security	2010
Debian 7: System Administration Best Practices	Debian (Computer system); Operating systems (Computers)	2013

Title	Subject(s)	Year
Delivering Exceptional Project Results: A Practical Guide to Project Selection, Scoping, Estimation and Management	Project management	2011
Designing an IAM Framework with Oracle Identity and Access Management Suite	Computer networks; Database security	2010
Designing for the iPad: Building Applications That Sell	iPad (Computer) -- Programming; Mobile computing	2011
Designing Search: UX Strategies for Ecommerce Success	Electronic commerce	2011
Developing Mobile Games with Moai SDK: Learn the Basics of Moai SDK Through Developing Games	Mobile computing	2013
Developing RESTful Services with JAX-RS 2.0, WebSockets, and JSON	Java (Computer program language)	2013
The Disaster Recovery Handbook: A Step-by-Step Plan to Ensure Business Continuity and Protect Vital Operations, Facilities, and Assets	Computer security; Data protection; Data recovery (Computer science)	2010
E-business in the 21st Century: Realities, Challenges, and Outlook	Electronic commerce	2010
EBu$iness: 7 Steps to Getting Your Small Business Online and Making Money Now!	Electronic commerce	2011
Effective Project Management	Project management	2011
Effective Project Management: Traditional, Agile, Extreme	Project management	2014
EJB 3.1 Cookbook: Build Real World EJB Solutions with a Collection of Simple But Incredibly Effective Recipes	Java (Computer program language)	2011
e-Negotiations: Networking and Cross-Cultural Business Transactions	Electronic commerce	2012
ElasticSearch Cookbook	Client/server computing	2013
Emotional Intelligence for Project Managers: The People Skills You Need to Achieve Outstanding Results	Project management	2013
Encase Computer Forensics: The Official ENCE: Encase Certified Examiner Study Guide	Computer security; Computer networks; Electronic data processing personnel	2012
The End of Business As Usual: Rewire the Way You Work to Succeed in the Consumer Revolution	Information technology -- Management	2012

Title	Subject(s)	Year
Enterprise Android: Programming Android Database Applications for the Enterprise	Android (Electronic resource)	2014
Enterprise Content Management: A Business and Technical Guide	Database management; Information technology -- Management	2011
Enterprise Project Governance: A Guide to the Successful Management of Projects Across the Organization	Project management	2012
Enterprise Security: A Data-Centric Approach to Securing the Enterprise: A Guide to Applying Data-Centric Security Concepts for Securing Enterprise Data to Enable an Agile Enterprise	Computer security; Electronic commerce -- Security measures	2013
Entrepreneur Magazine's Start Your Own Blogging Business: Generate Income from Advertisers, Subscribers, Merchandising and More	Electronic commerce	2010
Essential Linux Administration: A Comprehensive Guide for Beginners	Computer networks; Linux; Operating systems (Computers)	2012
Essentials of Online Payment Security and Fraud Prevention	Electronic commerce -- Security measures	2010
The Excel Analyst's Guide to Access	Database management	2010
Exchange Server 2010 Administration: Real World Skills for MCITP Certification and Beyond	Client/server computing; Electronic data processing personnel	2011
Executive's Guide to Cloud Computing	Business enterprises -- Computer networks -- Management; Information technology -- Management; Cloud computing	2010
Executive's Guide to Project Management: Organizational Processes and Practices for Supporting Complex Projects	Project management	2011
The Expert Diaries: Guide to Networking	Computer networks	2011
Exploring Windows 8 for Dummies	Operating systems (Computers); Microsoft Windows (Computer file)	2012
Ext GWT 2.0: Beginner's Guide; Take the User Experience of Your Website to a New Level with Ext GWT	Java (Computer program language)	2010
ExtGWT Rich Internet Application Cookbook: 80 Recipes to Build Rich Java Web Apps on the Robust GWT Platform, with Sencha ExtGWT	Java (Computer program language)	2012

Title	Subject(s)	Year
Ext JS 4 Web Application Development Cookbook	User interfaces (Computer systems)	2012
Extending Microsoft Dynamics AX 2012 Cookbook	Database management	2013
Facilitating Project Performance Improvement: A Practical Guide to Multi-Level Learning	Project management	2010
The Fast Forward MBA in Project Management	Project management	2011
Fedora Bible 2011 Edition: Featuring Fedora Linux 14	Operating systems (Computers); Linux	2011
Fedora Bible: Featuring Fedora Linux 12	Linux; Operating systems (Computers)	2010
Fedora Bible 2011 Edition: Featuring Fedora Linux 14	Linux; Operating systems (Computers)	2011
Femtocells: Design & Application	Wireless LANs	2011
Finance for IT Decision Makers: A Practical Handbook	Information technology -- Management	2012
Five Stars: Putting Online Reviews to Work for Your Business	Electronic data processing -- Distributed processing; Service oriented architecture (Computer science)	2014
Flash Development for Android Cookbook: Over 90 Recipes to Build Exciting Android Applications with Flash, Flex, and AIR	Android (Electronic resource)	2011
Flash iOS Apps Cookbook: 100 Practical Recipes for Developing iOS Apps with Flash Professional and Adobe AIR	iOS (Electronic resource)	2012
Flexible Input, Dazzling Output with IBM i	Computer architecture; Operating systems (Computers); Virtual computer systems	2014
Force.com Developer Certification Handbook (DEV401): A Comprehensive Handbook to Guide Force.com Developers Through Important Fundamentals and Prepare Them for the DEV401 Exam	Cloud computing; Service oriented architecture (Computer science)	2012
Force.com Tips and Tricks: A Quick Reference Guide for Administrators and Developers to Get More Productive with Force.com	Cloud computing; Electronic data processing -- Distributed processing	2013
Formal Models and Techniques for Analyzing Security Protocols	Computer security	2011

Title	Subject(s)	Year
FreeRADIUS Beginner's Guide: Manage Your Network Resources with FreeRADIUS	Computer networks	2011
FreeSWITCH 1.0.6: Build Robust High Performance Telephony Systems Using FreeSWITCH	Computer network protocols; Internet telephony	2010
FreeSWITCH 1.2: Build Robust, High-Performance Telephony Systems Using FreeSWITCH	Computer network protocols; Internet telephony	2013
Fundamental 2D Game Programming with Java	Java (Computer program language)	2015
Fundamentals of Pervasive Information Management Systems	Mobile computing	2013
Fundamentals of Wireless Sensor Networks: Theory and Practice	Wireless sensor networks	2010
Game and Graphics Programming for iOS and Android with OpenGL ES 2.0	iOS (Electronic resource); Android (Electronic resource); Mobile computing	2012
GateIn Cookbook	Intranets (Computer networks)	2012
Get Rich with Apps! Your Guide to Reaching More Customers and Making Money Now	Mobile computing	2010
Getting Started with Amazon Redshift: Enter the Exciting World of Amazon Redshift for Big Data, Cloud Computing, and Scalable Data Warehousing	Cloud computing; Electronic data processing -- Distributed processing	2013
Getting Started with C++ Audio Programming for Game Development	C++ (Computer program language)	2013
Getting Started with Citrix CloudPortal	Client/server computing; Cloud computing	2013
Getting Started with Citrix VDI-in-a-Box: Design and Deploy Virtual Desktops Using Citrix VDI-in-a-Box	Computer networks; Virtual computer systems	2013
Getting Started with Citrix XenApp 6: Design and Implement Citrix Farms Based on XenApp 6	Client/server computing; Computer networks	2011
Getting Started with Citrix XenApp 6.5: Design and Implement Citrix Farms Based on XenApp 6.5	Client/server computing -- Security measures; Computer security	2012

Title	Subject(s)	Year
Getting Started with Drupal Commerce: Learn Everything You Need to Know in Order to Get Your First Drupal Commerce Website Set Up and Trading	Electronic commerce	2013
Getting Started with Eclipse Juno: A Fast Paced Tutorial to Get You Up and Running with Eclipse Juno IDE	Java (Computer program language)	2013
Getting Started with Flurry Analytics	Database management	2013
Getting Started with FortiGate	Computer security; Data protection	2013
Getting started with Greenplum for Big Data Analytics	Database management	2013
Getting Started with HTML5 WebSocket Programming	Client/server computing	2013
Getting Started with IBM FileNet P8 Content Manager: Install, Customize, and Administer the Powerful FileNet Enterprise Content Management Platform	Information technology -- Management	2011
Getting Started with IntelliJ IDEA	Client/server computing	2013
Getting Started with JUCE	C++ (Computer program language)	2013
Getting Started with LevelDB	iOS (Electronic resource)	2013
Getting Started with MariaDB	Client/server computing; Database management	2013
Getting Started with Memcached: Speed Up and Scale Out Your Web Applications with Memcached	Linux; Ubuntu (Electronic resource)	2013
Getting Started with Microsoft Application Virtualization 4.6: Virtualize Your Application Infrastructure Efficiently Using Microsoft App-V	Virtual computer systems	2011
Getting Started with nopCommerce: An In-Depth, Practical Guide to Getting Your First E-commerce Website Up and Running Using nopCommerce	Electronic commerce	2013
Getting Started with NoSQL: Your Guide to the World and Technology of NoSQL	Database management	2013
Getting Started with OpenCart Module Development	Electronic commerce	2013

Title	Subject(s)	Year
Getting Started with Oracle BPM Suite 11gR1: A Hands-On Tutorial: Learn from the Experts - Teach Yourself Oracle BPM Suite 11g with an Accelerated and Hands-On Learning Path Brought to You by Oracle BPM Suite Product Management Team Members	Service oriented architecture (Computer science)	2010
Getting Started with Oracle Event Processing 11g	Database management	2013
Getting Started with Oracle Tuxedo: A Practicle Guide to Client/Server Technology Using Tuxedo and Extending It to SOA and Cloud Quickly	Client/server computing	2013
Getting Started with Oracle VM Virtualbox: Build Your Own Virtual Environment from Scratch Using vVirtualbox	Virtual computer systems	2013
Getting Started with ownCloud	Cloud computing; Database management	2013
Getting Started with SQL Server 2012 Cube Development: Learn to Develop and Query Analysis Services Cubes and Models, with a Practical, Step-by-Step Approach	Client/server computing; Relational databases; SQL server	2013
Getting Started with Talend Open Studio for Dita Integration	Database management	2012
Getting Started with the Lazarus IDE: Get to Grips with the Basics of Programming, Debugging, Creating, and Documenting Projects with the Lazarus IDE	Virtual computer systems	2013
Gideros Mobile Game Development	Mobile computing	2013
Global Mobile: Applications and Innovations for the Worldwide Mobile Ecosystem	Mobile computing	2013
GNS3 Network Simulation Guide	Computer network protocols; Virtual computer systems	2013
Go Mobile: Location-Based Marketing, Apps, Mobile Optimized Ad Campaigns, 2D Codes and Other Mobile Strategies to Grow Your Business	Mobile commerce	2012
Going Mobile: Developing Apps for Your Library Using Basic HTML Programming	Smartphones -- Programming; Mobile computing	2012

Title	Subject(s)	Year
Google App Engine Java and GWT Application Development: Build Powerful, Scalable, and Interactive Web Apps in the Cloud	Java (Computer program language)	2010
Google Glass for Dummies	Mobile computing	2014
Google Maps JavaScript API Cookbook	Application program interface (Computer software)	2013
Google Web Toolkit 2: Over 70 Simple But Incredibly Effective Practical Recipes to Develop Web Applications Using GTW with JPA, MySQL and iReport	Java (Computer program language)	2010
Governance and Internal Controls for Cutting Edge IT	Information technology -- Management; Information technology -- Security measures	2013
Governance, Risk, and Compliance Handbook for Oracle Applications	Data protection	2012
Gower Handbook of Project Management	Project management	2014
Gradle Effective Implementation Guide	Java (Computer program language)	2012
Graph Theoretic Methods in Multiagent Networks	Network analysis (Planning)	2010
Groovy 2 Cookbook	Object oriented programming languages	2013
Group Policy: Fundamentals, Security, and the Managed Desktop	Computer security; Operating systems (Computers); Microsoft Windows (Computer file)	2010
Group Policy: Fundamentals, Security, and the Managed Desktop (2nd ed)	Computer security; Operating systems (Computers); Microsoft Windows (Computer file)	2013
Guidebook to R Graphics Using Microsoft Windows	Microsoft Windows (Computer file)	2012
Hacking and Securing iOS Applications	Computer security; Objective C (Computer program language); iOS (Electronic resource) -- Security measures	2013
Hacking Exposed Malware & Rootkits: Malware & Rootkits Security Secrets & Solutions	Computer security	2010
Hacking Exposed Wireless: Wireless Security Secrets & Solutions	Wireless LANs -- Security measures	2010
Hacking for Dummies	Computer security; Computer networks	2013

Title	Subject(s)	Year
Hacking Point of Sale: Payment Application Secrets, Threats, and Solutions	Computer networks -- Security measures; Computer security	2014
Hadoop Beginner's Guide: Learn How to Crunch Big Data to Extract Meaning from the Data Avalanche	Java (Computer program language)	2013
Hadoop for Dummies	Electronic data processing -- Distributed processing	2014
Hadoop MapReduce Cookbook: Recipes for Analyzing Large and Complex Datasets with Hadoop MapReduce	Cloud computing; Electronic data processing -- Distributed processing	2013
Hadoop Real-World Solutions Cookbook: Realistic, Simple Code Examples to Solve Problems at Scale with Hadoop and Related Technologies	Electronic data processing -- Distributed processing	2013
Handbook of Research on Computational Forensics, Digital Crime, and Investigation: Methods and Solutions	Computer security	2010
Handheld Computing for Mobile Commerce: Applications, Concepts and Technologies	Business enterprises -- Computer networks; Mobile computing; Mobile commerce; Electronic commerce	2010
Hands-On Microsoft SQL Server 2008 Integration Services	Database management; SQL server	2011
Hashing in Computer Science: Fifty Years of Slicing and Dicing	Computer security	2010
HBase Administration Cookbook: Master HBase Configuration and Administration for Optimum Database Performance	Database management; Electronic data processing -- Distributed processing	2012
HDInsight Essentials: Tap Your Unstructured Big Data and Empower Your Business Using the Hadoop Distribution from Windows	Electronic data processing -- Distributed processing	2013
Health Informatics in the Cloud	Cloud computing	2013
Health Information Management Technology: An Applied Approach	Information resources management	2013
Heterogeneous Networks in LTE-Advanced	Internet telephony	2014
Heuristics in Analytics: A Practical Perspective of What Influences Our Analytical World	System analysis	2014
Hope, Hype, and VoIP: Riding the Library Technology Cycle	Internet telephony	2010
HornetQ Messaging Developer's Guide	Java (Computer program language)	2012

Title	Subject(s)	Year
How Linux Works: What Every Superuser Should Know	Linux; Operating systems (Computers)	2015
How To Do Everything: iCloud	Cloud computing; Mac OS; iOS (Electronic resource)	2012
How to Do Everything: iPad	Tablet computers	2010
How To Do Everything MacBook	Mac OS	2011
How to Do Everything: Microsoft SharePoint 2010	Intranets (Computer networks)	2010
HP Network Node Manager 9: Getting Started: Manage Your Network Effectively with NNMi	Client/server computing; Computer networks	2011
HTML5 iPhone Web Application Development: An Introduction to Web-Application Development for Mobile within the iOS Safari Browser	iOS (Electronic resource); iPhone (Smartphone) -- Programming	2013
HTML5 Mobile Development Cookbook: Over 60 Recipes for Building Fast, Responsive HTML5 Mobile Websites for iPhone 5, Android, Windows Phone, and Blackberry	Mobile computing	2012
Hyper-V Replica Essentials: Ensure Business Continuity and Improve Your Disaster Recovery Policy Using Hyper-V Replica	Data recovery (Computer science); Virtual computer systems	2013
IBM Cognos 10 Framework Manager: A Comprehensive, Practical Guide to Using This Essential Tool for Modeling Your Data for Use with IBM Cognos Business Intelligence Reporting	Database management	2013
IBM Cognos 10 Report Studio Cookbook	Database management	2013
IBM DB2 9.7 Advanced Administration Cookbook: Over 100 Recipes Focused on Advanced Administration Tasks to Build and Configure Powerful Databases with IBM DB2: [Quick Answers to Common Problems]	Database management	2012
IBM DB2 9.7 Advanced Application Developer Cookbook	Database management; Relational databases	2012

Title	Subject(s)	Year
IBM Lotus Notes and Domino 8.5.3: Upgrader's Guide: Upgrade Your System and Embrace the Exciting New Features of the IBM Lotus Notes and Domino 8.5.3 Platform	Database management	2012
IBM Rational Team Concert2 Essentials: Improve Team Productivity with Integrated Processes, Planning, and Collaboration Using Team Concert Enterprise Edition	Project management -- Computer programs	2011
IBM SmartCloud Essentials: Navigate and Use the IBM SmartCloud Portfolio for Building Cloud Solutions	Computer networks; Data recovery (Computer science); Database management	2013
IBM SPSS Modeler Cookbook	Database management	2013
IBM WebSphere Application Server V7.0 Security: Secure Your WebSphere Applications with Java EE and JAAS Security Standards	Computer networks -- Security measures	2011
Icinga Network Monitoring	Computer architecture	2013
iCloud Standard Guide	Cloud computing; iOS (Electronic resource)	2013
Implementing Cisco UCS Solutions	Virtual computer systems	2013
Implementing Citrix XenServer Quickstarter: A Practical Guide to Getting Started with the Citrix XenServer Virtualization Technology with Easy-to-Follow Instructions	Computer organization; Virtual computer systems	2013
Implementing Splunk: Big Data Reporting and Development for Operational Intelligence: Learn to Transform Your Machine Data Into Valuable IT and Business Insights with this Comprehensive and Practical Tutorial	Database management	2013
Implementing VMware Horizon View 5.2: A Practical Guide to Designing, Implementing, and Administrating an Optimized Virtual Desktop Solution with VMware Horizon View	Virtual computer systems	2013
Implementing VMware vCenter Server	Virtual computer systems	2013
Improving Your Project Management Skills	Project management	2011

Title	Subject(s)	Year
Information and the Modern Corporation	Information resources management; Information technology -- Management	2011
Information-Centric Networks: A New Paradigm for the Internet	Information networks	2013
Inside the Symbian SQL: A Mobile Developer's Guide to SQLite	Mobile computing; Database management	2010
Instant Apache Maven Starter	Java (Computer program language)	2013
Instant Android Systems Development How-To: Get Your Hands Dirty with Android Systems Development Through Carefully Thought-Out Source Code Examples	Android (Electronic resource); Mobile computing	2013
Instant Apache Hive Essentials How-To: Leverage Your Knowledge of SQL to Easily Write Distributed Data Processing Applications on Hadoop Using Apache Hive	Database management; Relational databases	2013
Instant Apache Solr for Indexing Data How-To: Learn How to Index Your Data Correctly and Create Better Search Experiences with Apache Solr	Client/server computing	2013
Instant AppFog	Cloud computing	2013
Instant Buildroot: Automate the Building Process of Your Embedded System and Ease the Cross-Compilation Process with Buildroot	Linux; Operating systems (Computers)	2013
Instant Cassandra Query Language: A Practical, Step-by-Step Guide for Quickly Getting Started with Cassandra Query Language	Computer networks; Database management	2013
Instant Data Intensive Apps with Pandas How-To: Manipulate, Visualize, and Analyze Your Data with Pandas	Object oriented programming (Computer science)	2013
Instant Debian - Build a Web Server: Build Strong Foundations for Your Future-Ready Web Application Using the Universal Operating System, Debian	Operating systems (Computers)	2013
Instant Eclipse 4 RCP Development How-To: Over 10 Practical Recipes for Creating Rich Client Applications Using Eclipse 4	Java (Computer program language)	2013

Title	Subject(s)	Year
Instant Highcharts	Client/server computing	2013
Instant HTML5 Geolocation How-To: Learn How to Create Elegant, Location-Aware Web Applications Using the JavaScript Geolocation API	Application program interfaces (Computer software)	2013
Instant Java Password and Authentication Security	Computer security	2013
Instant Kali Linux	Linux; Operating systems (Computers)	2013
Instant Magento Shipping How-To: Making Magento Shipping Settings Work for Your Business	Electronic commerce	2013
Instant MapReduce Patterns - Hadoop Essentials How-To: Practical Recipes to Write Your Own MapReduce Solution Patterns for Hadoop Programs	Electronic data processing -- Distributed processing	2013
Instant MDX Queries for SQL Server 2012	Client/server computing; SQL server	2013
Instant Microsoft SQL Server Analysis Services 2012 Dimensions and Cube	Database management; SQL server	2013
Instant Minecraft: Pi Edition Coding How-To: Expand Your Minecraft World by Learning to Code with Minecraft: Pi Edition	Raspberry Pi (Computer) -- Programming	2013
Instant Mock Testing with PowerMock	Java (Computer program language)	2013
Instant Mockito	User interfaces (Computer systems)	2013
Instant Nagios Starter: An Easy Guide to Getting a Nagios Server Up and Running for Monitoring, Altering, and Reporting	Computer networks	2013
Instant OpenNMS Starter: A Short, Fast, and Focused Guide on OpenNMS That Delivers Immediate Results	Computer networks	2013
Instant Passbook App Development for iOS How-To: Create and Customize a Passbook Pass with the Exciting New iOS Features	Mobile computing; iOS (Electronic resource); iPad (Computer) -- Programming; iPhone (Smartphone) -- Programming	2013
Instant Pentaho Data Integration Kitchen	Database management	2013
Instant PhoneGap	Mobile computing	2014
Instant Play Framework Starter: Build Your Web Applications from the Ground Up with the Play Framework for Java and Scala	Java (Computer program language)	2013

Title	Subject(s)	Year
Instant Raspberry Pi Gaming: Your Guide to Gaming on the Raspberry Pi, from Classic Arcade Games to Modern 3D Adventures	Raspberry Pi (Computer)	2013
Instant Redis Optimization How-To: Learn How to Tune and Optimize Redis for High Performance	Database management	2013
Instant Redis Persistence	Database management	2013
Instant Sencha Touch	Mobile computing	2013
Instant Spring Security Starter: Learn the Fundamentals of Web Authentication and Authorization Using Spring Security	Computer networks -- Security measures; Java (Computer program language)	2013
Instant VMware View Virtualization How-To: A Practical Guide to Getting Started with Virtualization using VMware View	Virtual computer systems	2013
Instant Web Scraping with Java	Java (Computer program language)	2013
Instant Windows PowerShell Functions	Command languages (Computer science)	2013
Instant XenMobile MDM: A Guide to Effectively Equipping Mobile Devices with Configuration, Security, Provisioning, and Support Capabilities using XenMobile, the World's Most Popular Mobile Management Software	Mobile computing	2013
Instant Zepto.js: Create Fast and Responsive Mobile Web Apps with Zepto.js	Mobile computing	2013
Integrated Measurement-- KPIs and Metrics for ITSM: A Narrative Account	Information technology -- Management	2013
Integrating Macs into Windows Networks	Internetworking (Telecommunication)	2010
Intelligent Quality of Service Technologies and Network Management: Models for Enhancing Communication	Network performance (Telecommunication); Computer networks	2010
Internet Architecture and Innovation	Computer network architectures	2010
The Internet of Things: Applications to the Smart Grid and Building Automation	Sensor networks	2012
Internet Protocol-Based Emergency Services	Computer network protocols	2013
Introduction to Android Application Development	Android (Electronic resource)	2014

Title	Subject(s)	Year
Introduction to Bada: A Developer's Guide	Application program interfaces (Computer software); Smartphones -- Programming	2010
Introduction to Python Programming and Developing GUI Applications with PyQT	Graphical user interfaces (Computer systems)	2012
An Introduction to TTCN-3	Computer networks	2011
Invaluable Knowledge: Securing Your Company's Technical Expertise	Information technology -- Management	2011
Investigative Computer Forensics: The Practical Guide for Lawyers, Accountants, Investigators, and Business Executives	Computer security	2013
iOS 5 Essentials: Harness iOS 5's New Powerful Features to Create Stunning Applications	iOS (Electronic resource)	2012
iOS 6 Application Development for Dummies	iOS (Electronic resource); iPhone (Smartphone) -- Programming; iPad (Computer) -- Programming	2013
iOS 6 Foundations	Operating systems (Computers); iOS (Electronic resource)	2013
iOS 6 Programming: Pushing the Limits: Advanced Application Development for Apple iPhone, iPad, and iPod Touch	iOS (Electronic resource); iPhone (Smartphone) -- Programming; iPad (Computer) -- Programming; Mobile computing	2013
iOS 7 Game Development: Develop Powerful, Engaging Games with Ready-to-Use Utilities from Sprite Kit	iPad (Computer) -- Programming; iPhone (Smartphone) -- Programming	2014
iOS 7 Programming: Pushing the Limits: Developing Extraordinary Mobile Apps for Apple iPhone, iPad, and iPod Touch	Operating systems (Computers); iOS (Electronic resource)	2014
iOS and OS X Network Programming Cookbook: Over 50 Recipes to Develop Network Applications in Both the iOS and OS X Environment	Operating systems (Computers); iOS (Electronic resource)	2014
iOS App Development: Portable Genius	iOS (Electronic resource)	2012
iOS Application Development for Dummies	Operating systems (Computers); iOS (Electronic resource)	2014
iOS Hacker's Handbook	iOS (Electronic resource); Operating systems (Computers)	2012
IP Telephony: Deploying VoIP Protocols and IMS Infrastructure	Internet telephony	2010
iPad 2 Portable Genius	Tablet computers	2011

Title	Subject(s)	Year
iPad 4th Generation & iPad Mini: Portable Genius	Tablet computers	2013
iPad Action Gaming for Teens	iPad (Computer) -- Programming	2014
iPad Apps for Kids for Dummies	Tablet computers	2013
iPad Enterprise Application Development BluePrints	iPad (Computer) -- Programming	2012
iPad in Education for Dummies	Tablet computers	2013
iPad Mini for Dummies	Tablet computers	2014
iPad Portable Genius	Tablet computers	2014
iPads in the Library: Using Tablet Technology to Enhance Programs for All Ages	Tablet computers	2013
iPhone Development with Flash: Your Visual Blueprint for Developing Apple Apps	iPhone (Smartphone) -- Programming; iOS (Electronic resource)	2011
iPhone Game Blueprints	iPhone (Smartphone) -- Programming	2013
iPhone JavaScript Cookbook: Clear and Practical Recipes for Building Web Applications Using JavaScript and AJAX Without Having to Learn Objective-C or Cocoa	iPhone (Smartphone) -- Programming	2011
iPhone OS Development: Your Visual Blueprint for Developing Apps for Apple's Mobile Devices	iPhone (Smartphone) -- Programming	2010
iPhone SDK Programming: A Beginner's Guide	iPhone (Smartphone) -- Programming	2010
iPhone Secrets: Do What You Never Thought Possible with Your iPhone	Internet telephony; Mobile computing; iPhone (Smartphone)	2012
iPhone With Microsoft Exchange Server 2010: Business Integration and Deployment	iPhone (Smartphone) -- Programming; Client/server computing	2012
IT Career Jumpstart: An Introduction to PC Hardware, Software, and Networking	Computer input output equipment	2012
IT Leadership Manual: Roadmap to Becoming a Trusted Business Partner	Information technology -- Management	2012
IT Security Metrics: A Practical Framework for Measuring Security & Protecting Data	Information technology -- Security measures; Computer security	2010
The ITSm Process Design Guide: Developing, Reengineering, and Improving IT Service Management	Information technology -- Management; Information resources management	2010

Title	Subject(s)	Year
Ivor Horton's Beginning Java: Java 7 Edition	Java (Computer program language)	2011
Ivor Horton's Beginning Visual C++ 2010	C++ (Computer program language)	2010
Ivor Horton's Beginning Visual C++ 2012	C++ (Computer program language)	2012
JasperReports 3.6 Development Cookbook: Over 50 Recipes to Create Next-Generation Reports Using JasperReports	Java (Computer program language)	2010
Java 7: A Beginner's Tutorial	Java (Computer program language); Object oriented programming (Computer science)	2011
Java 7: A Comprehensive Tutorial	Java (Computer program language)	2014
Java 7 Concurrency Cookbook	Java (Computer program language)	2012
Java 7 JAX-WS Web Services: A Practical, Focused Mini Book for Creating Web Services in Java 7	Java (Computer program language)	2012
Java 7 New Features Cookbook: Over 100 Comprehensive Recipes to Get You Up-to-Speed with All the Exciting New Features of Java 7: [Quick Answers to Common Problems]	Java (Computer program language)	2012
Java All-in-One for Dummies	Java (Computer program language)	2014
Java and Mac OS X	Java (Computer program language); Mac OS	2010
Java EE 6 Cookbook for Securing, Tuning, and Extending Enterprise Applications Packed with Comprehensive Recipes to Secure, Tune, and Extend Your Java EE Applications	Java (Computer program language); Application program interfaces (Computer software)	2012
Java EE 6 Development with Netbeans 7: Develop Professional Enterprise Java EE Applications Quickly and Easily with This Popular IDE	Java (Computer program language)	2011
Java EE 6 with GlassFish 3 Application Server: A Practical Guide to Install and Configure the GlassFish 3 Application Server and Develop Java EE 6 Applications to Be Deployed to This Server	Application program interfaces (Computer software); Java (Computer program language)	2010
Java EE 7 Developer Handbook: Develop Professional Applications in Java EE 7 with This Essential Reference Guide	Java (Computer program language)	2013

Title	Subject(s)	Year
Java EE Development with Eclipse: Develop Java EE Applications with Eclipse and Commonly Used Technologies and Frameworks	Java (Computer program language)	2012
Java for Dummies	Java (Computer program language)	2014
Java in a Nutshell: A Desktop Quick Reference	Java (Computer program language); Object oriented programming (Computer science)	2014
Java Persistence with MyBatis 3: A Practical Guide to MyBatis, a Simple Yet Powerful Java Persistence Framework!	Java (Computer program language); Object oriented programming (Computer science)	2013
Java Programming for Android Developers for Dummies	Java (Computer program language)	2014
Java Programming Interviews Exposed	Java (Computer program language)	2014
JavaFX 1.2 Application Development Cookbook: Over 80 Recipes to Create Rich Internet Applications with Many Exciting Features	Java (Computer program language)	2010
JavaScript Programming: Pushing the Limits: Advanced Application Development with JavaScript & HTML5	Java (Computer program language)	2013
JBoss AS 5 Performance Tuning: Build Faster, More Efficient Enterprise Java Applications	Java (Computer program language)	2010
JBoss AS 7 Development: Develop, Deploy, and Secure Java Applications on the New Release of This Robust, Open Source Application Server	Java (Computer program language); Web servers -- Management	2013
JBoss ESB: Beginner's Guide: A Comprehensive, Practical Guide to Developing Service-Based Applications Using the Open Source JBoss Enterprise Service Bus	Web servers -- Management; Java (Computer program language); Client/server computing	2012
JIRA 4 Essentials: Track Bugs, Issues, and Manage Your Software Development Projects with JIRA	Project management -- Computer programs	2011
JIRA 5.x Development Cookbook: This Book Is Your One-Stop Resource for Mastering JIRA Extensions and Customizations	Project management -- Computer programs	2013

Title	Subject(s)	Year
jMonkeyEngine 3.0 Beginner's Guide: Develop Professional 3D Games for Desktop, Web, and Mobile, All in the Familiar Java Programming Language	Java (Computer program language)	2013
Joomla! Mobile Development Beginners Guide: Build Joomla! Websites for Mobile Devices	Mobile computing	2012
jQuery Mobile Cookbook	Mobile computing	2012
jQuery Mobile Web Development Essentials: Build Mobile-Optimized Websites Using the Simple, Practical, and Powerful jQuery-Based Framework	Mobile computing	2013
jQuery Mobile Web Development Essentials: Learn to Use the Touch-Optimized, Cross-Device, Cross-Platform jQM Web Framework for Smartphones and Tablets	Mobile computing	2012
Kali Linux Cookbook	Linux; Operating systems (Computers)	2013
Kindle Fire Geekery: 50 Insanely Cool Projects for Your Amazon Tablet	Tablet computers	2012
Kindle Paperwhite for Dummies	Tablet computers	2014
Kinect in Motion - Audio and Visual Tracking by Example: A Fast-Paced, Practical Guide Including Examples, Clear Instructions, and Details for Building Your Own Multimodal User Interface	User interfaces (Computer systems)	2013
Knight's Microsoft SQL Server 2012 Integration Services 24-Hour Trainer	Database management; Client/server computing; SQL server	2013
Kohana 3.0 Beginner's Guide: Develop Professional Web Applications with Kohana	Object-oriented programming (Computer science)	2011
Leadership Principles for Project Success	Project management	2011
Leading Change in a Web 2.1 World: How ChangeCasting Builds Trust, Creates Understanding, and Accelerates Organizational Change	Information technology -- Management	2010
Learning Android Canvas	Android (Electronic resource); Mobile computing	2013
Learning AWS OpsWorks: Learn How to Exploit Advanced Technologies to Deploy and Auto-Scale Web Stacks	Cloud computing	2013

Title	Subject(s)	Year
Learning C# by Developing Games with Unity 3D Beginner's Guide: Learn the Fundamentals of C# to Create Scripts for Your GameObjects	C++ (Computer program language)	2013
Learning Cython Programming: Expand Your Existing Legacy Applications in C Using Python	C++ (Computer program language)	2013
Learning Devise for Rails	Object oriented programming (Computer science)	2013
Learning Ext JS 3.2: Build Dynamic, Desktop-Style User Interfaces for Your Data-Driven Web Applications Using Ext JS	User interfaces (Computer systems)	2010
Learning in 3D: Adding a New Dimension to Enterprise Learning and Collaboration	Computer networks	2010
Learning Management System Technologies and Software Solutions for Online Teaching: Tools and Applications	System analysis	2010
Learning Metasploit Exploitation and Development	Penetration testing (Computer security)	2013
Learning Microsoft Windows Server 2012 Dynamic Access Control	Client/server computing; Microsoft Windows (Computer file)	2013
Learning Nessus for Penetration Testing	Computer networks -- Security measures	2014
Learning Shell Scripting with Zsh: Your One-Stop Guide to Reading, Writing, and Debugging Simple and Complex Z Shell Scripts	Operating systems (Computers)	2014
Learning SQL Server Reporting Services 2012	Client/server computing; Database management; SQL server	2013
Learning Windows 8 Game Development	Microsoft Windows (Computer file)	2013
Learning Windows Azure Mobile Services for Windows 8 and Windows Phone 8: A Short, Fast and Focused Guide to Enhance Your Windows 8 Applications by Leveraging the Power of Windows Azure Mobile Services	Microsoft Windows (Computer file); Mobile computing; Smartphones -- Programming; Windows phone (Computer file)	2014
Learning Zimbra Server Essentials	Client/server computing	2013
Least Privilege Security for Windows 7, Vista, and XP: Secure Desktops for Regulatory Compliance and Business Agility	Computer security	2010

Title	Subject(s)	Year
Lessons in IT Transformation: Technology Expert to Business Leader	Information technology -- Management	2011
Liferay 6.2 User Interface Development	Application program interfaces (Computer software)	2013
Liferay User Interface Development: Develop a Powerful and Rich User Interface with Liferay Portal 6	Intranets (Computer networks)	2010
Linux Bible: Boot Up to Ubuntu, Fedora, KNOPPIX, Debian, openSUSE, and 13 Other Distributions	Operating systems (Computers); Linux	2010
The Linux Command Line: A Complete Introduction	Operating systems (Computers); Linux	2012
Linux Command Line and Shell Scripting Bible	Operating systems (Computers); Linux	2011
Linux Essentials	Operating systems (Computers); Linux	2012
Linux Mint System Administrator's Beginner's Guide: A Practical Guide to Learn Basic Concepts, Techniques, and Tools to Become a Linux Mint System Administrator	Operating systems (Computers)	2012
The Linux Programming Interface: A Linux and UNIX System Programming Handbook	Operating systems (Computers); Linux; UNIX (Computer file)	2010
Linux Shell Scripting Cookbook: Over 110 Practical Recipes to Solve Real-World Shell Problems, Guaranteed to Make You Wonder How You Ever Lived Without Them	Linux	2013
Linux Shell Scripting Cookbook: Solve Real-World Shell Scripting Problems with Over 110 Simple but Incredibly Effective Recipes	Linux	2010
Linux Utilities Cookbook	Linux; Operating systems (Computers)	2013
The Little Black Book of Project Management	Project management	2010
The Live Web: Building Event-Based Connections in the Cloud	Cloud computing	2012
LiveCode Mobile Development Beginner's Guide: Create Fun-Filled, Rich Apps for Android and iOS with LiveCode	Mobile computing; Operating systems (Computers); Smartphones -- Programming	2012
LiveCode Mobile Development Hotshot	Mobile computing; Smartphones -- Programming	2013

Title	Subject(s)	Year
Love for Lua Game Programming	Mobile computing	2013
LPIC-1: Linux Professional Institute Certification Study Guide	Linux; Electronic data processing personnel	2013
LPIC-2: Linux Professional Institute Certification Study Guide	Linux; Electronic data processing personnel	2011
Mac Application Development by Example Beginner's Guide: A Comprehensive and Practical Guide, for Absolute Beginners, to Developing Your Own App for Mac OS X	Operating systems (Computers); Mac OS	2012
Mac OS X and iOS Internals: To the Apple's Core	Operating systems (Computers); Systems software; Mac OS	2013
Mac OS X Lion	Operating systems (Computers); Mac OS	2011
Mac OS X System Administration	Operating systems (Computers); Mac OS	2010
Mac Security Bible	Computer security; Computer networks; Operating systems (Computers); Mac OS	2010
Magento 1.4 Themes Design	Electronic commerce	2011
Magento 1.4 Theming Cookbook: Over 40 Recipes to Create a Fully Functional, Feature Rich, Customized Magento Theme	Electronic commerce	2011
Magento Beginner's Guide	Electronic commerce	2013
Magento Mobile How-To: Create and Configure Your Own Magento Mobile Application and Publish It for the Android and iOS Platforms	Electronic commerce; Mobile computing	2012
Magento PHP Developer's Guide: Get Started with the Flexible and Powerful E-commerce Framework, Mangento	Electronic commerce	2013
Magento Responsive Theme Design	Electronic commerce	2013
Making Effective Business Decisions Using Microsoft Project	Project management -- Computer programs	2013
Making Money Online	Electronic commerce	2013
Manage Partitions with GParted How-To: A Task-Based, Step-by-Step Guide That Empowers You to Use Your Disk Space Effectively	Data compression (Computer science)	2012

Title	Subject(s)	Year
Management Strategies for the Cloud Revolution: How Cloud Computing is Transforming Business and Why You Can't Be Left Behind	Information technology -- Management; Cloud computing	2010
A Manager's Guide to ISO22301: Practical Guide to Developing and Implementing a Business Continuity Management System	Database management; Information technology -- Management	2013
Managing Complex Projects	Project management	2010
Managing IaaS and DBaaS Clouds with Oracle Enterprise Manager Cloud Control 12c	Cloud computing	2013
Managing IT Outsourcing Performance	Information technology -- Management	2010
Managing Multimedia and Unstructured Data in the Oracle Database	Database management	2013
Managing Multiple Projects	Project management	2011
Managing Stakeholder Expectations for Project Success: A Knowledge Integration Framework and Value Focused Approach	Project management	2014
Managing Successful Teams	Computer networks	2012
Managing Technology-Based Projects: Tools, Techniques, People, and Business Processes	Information technology -- Management; Information technology projects	2014
Maran Illustrated Windows 8	Microsoft Windows (Computer file); Operating systems (Computers)	2013
Master Your Mac: Simple Ways to Tweak, Customize, and Secure OS X	Operating systems (Computers); Mac OS	2013
Mastering Apache Cassandra	Database management	2013
Mastering ElasticSearch	Client/server computing	2013
Mastering Exchange Server 2013	Client/server computing	2014
Mastering Hyper-V Deployment	Virtual computer systems	2011
Mastering IT Project Management: Best Practices, Tools, and Techniques	Information technology -- Management; Project management; Information technology projects	2013
Mastering Microsoft Lync Server 2010	Client/server computing	2012
Mastering Microsoft Lync Server 2013	Client/server computing	2013
Mastering Microsoft SharePoint Foundation 2010	Client/server computing; Intranets (Computer networks)	2011
Mastering Microsoft Virtualization	Virtual computer systems	2010
Mastering Microsoft Windows Small Business Server 2008	Computer networks	2010

Title	Subject(s)	Year
Mastering OpenCV with Practical Computer Vision Projects	C++ (Computer program language)	2012
Mastering phpMyAdmin 3.3.x for Effective MySQL Management: A Complete Guide to Getting Started with phpMyAdmin 3.3 and Mastering Its Features	Database management	2010
Mastering phpMyAdmin 3.4 for Effective MySQL Management: A Complete Guide to Getting Started with phpMyAdmin 3.4 and Mastering Its Features	Database management	2012
Managing Project Stakeholders: Building a Foundation to Achieve Project Goals	Project management	2013
Mastering Redmine: A Comprehensive Guide with Tips, Tricks and Best Practices, and an Easy-to-Learn Structure	Project management -- Computer programs	2013
Mastering Resource Management Using Microsoft Project and Project Server 2010	Project management -- Computer programs	2011
Mastering Software Project Management: Best Practices, Tools and Techniques	Project management	2010
Mastering Software Project Requirements: A Framework for Successful Planning, Development & Alignment	Information technology projects; Project management	2013
Mastering System Center 2012 Operations Manager	Computer networks	2013
Mastering System Center Configuration Manager 2012	Client/server computing; Computer networks -- Management	2012
Mastering VMware vSphere 5.5	Virtual computer systems	2014
Mastering Windows 7 Deployment	Operating systems (Computers); Microsoft Windows (Computer file)	2011
Mastering Windows 8 C++ App Development: A Practical Guide to Developing Windows Store Apps with C++ and XAML	Operating systems (Computers); Microsoft Windows (Computer file)	2013
Mastering Windows Network Forensics and Investigation	Computer networks; Microsoft Windows (Computer file)	2012
Mastering Windows Server 2008 R2	Operating systems (Computers)	2010
Mastering Windows Server 2012	Operating systems (Computers); Microsoft Windows (Computer file)	2014

Title	Subject(s)	Year
Mastering Zabbix: Monitor Your Large IT Environment Efficiently with Zabbix	Information technology -- Management	2013
Mathematics and Physics for Programmers	Computer science -- Mathematics	2012
Maximize Your Social: One-Stop Guide to Building a Social Media Strategy for Marketing and Business Success	Information technology -- Management	2013
The McGraw-Hill 36-Hour Course: Project Management	Project management	2011
(MCTS): Microsoft BizTalk Server 2010 (70-595) Certification Guide: A Compact Certification Guide to Help You Prepare for and Pass Exam 70-595, TS, Developing Business Process and Integration Solutions by Using Microsoft BizTalk Server 2010	Client/server computing; Electronic commerce	2012
MCTS: Microsoft SharePoint 2010 Configuration Study Guide: [Exam 70-667]	Intranets (Computer networks)	2011
(MCTS): Microsoft Windows Small Business Server 2011 Standard, Configuring (70-169) Certification Guide: A Compact Certification Guide to Help You Prepare For and Pass the Microsoft Windows Small Business Server 2011 Standard, Configuring (70-169) Exam	Computer networks; Electronic data processing personnel	2012
MCTS: Windows Server 2008 R2 Complete Study Guide	Computer networks; Operating systems (Computers); Electronic data processing personnel	2011
MCTS: Microsoft Windows 7 Configuration Study Guide	Microsoft Windows (Computer file); Electronic data processing personnel	2011
MCTS: Microsoft Windows 7 Configuration Study Guide (70-680)	Microsoft Windows (Computer file); Electronic data processing personnel	2010
MDX with Microsoft SQL Server 2008 R2 Analysis Services: Cookbook: 80 Recipes for Enriching Your Business Intelligence Solutions with High-Performance MDX Calculations and Flexible MDX Queries	SQL server	2011
MDX with SSAS 2012 Cookbook	Client/server computing	2013

Title	Subject(s)	Year
Metasploit Penetration Testing Cookbook: Over 70 Recipes to Master the Most Widely Used Penetration Testing Framework	Computer networks; Penetration testing (Computer security)	2012
Metasploit: The Penetration Tester's Guide	Computer networks; Penetration testing (Computer security)	2011
Microsoft Access 2010 VBA Macro Programming	Database management	2011
Microsoft Access Small Business Solutions: State-of-the-Art Databases for Sales, Marketing, Customer Management, and More Key Business Activities	Database management	2010
Microsoft Access VBA Programming for the Absolute Beginner	Database management	2012
Microsoft Application Virtualization Advanced Guide	Virtual computer systems	2012
Microsoft Azure: Enterprise Application Development; Straight Talking Advice on How to Design and Build Enterprise Applications for the Cloud	Cloud computing	2010
Microsoft BizTalk 2010: Line of Business Systems Integration: A Practical Guide to Integrating Line of Business Systems with BizTalk Server 2010	Client/server computing	2011
Microsoft Data Protection Manager 2010: A Practical Step-by-Step Guide to Planning Deployment, Installation, Configuration, and Troubleshooting of Data Protection Manager 2010	Data protection	2011
The Microsoft Data Warehouse Toolkit: With SQL Server 2008 R2 and the Microsoft Business Intelligence Toolset	Client/server computing; SQL server	2011
Microsoft DirectAccess Best Practices and Troubleshooting	Computer network protocols; Computer networks -- Security measures	2013
Microsoft Exchange 2010 Powershell Cookbook: Manage and Maintain Your Microsoft Exchange 2010 Environment with Windows Powershell 2.0 and the Exchange Management Shell	Client/server computing	2011

Title	Subject(s)	Year
Microsoft Exchange 2013 Cookbook: Over 70 Simple But Incredibly Effective Recipes to Take You Through with the Common Rasks in Exchange 2013	Client/server computing	2013
Microsoft Exchange Server 2013 PowerShell Cookbook: Over 120 Recipes to Help Manage and Administrate Exchange Server 2013 with PowerShell 3	Operating systems (Computers); Systems programming (Computer science); Microsoft Windows (Computer file)	2013
Microsoft Exchange Server 2010 Administration Instant Reference	Client/server computing	2010
Microsoft Exchange Server 2013: Design, Deploy, and Deliver an Enterprise Messaging Solution	Client/server computing	2013
Microsoft Forefront Identity Manager 2010 R2 Handbook	Computer security	2012
Microsoft Forefront UAG 2010 Administrator's Handbook: Take Full Command of Microsoft Forefront Unified Access Gateway to Secure Your Business Applications and Provide Dynamic Remote Access with DirectAccess	Computer networks -- Security measures; Computer security; Microsoft Windows (Computer file)	2011
Microsoft Lync 2013 Unified Communications: From Telephony to Real-Time Communication in the Digital Age	Client/server computing	2013
Microsoft Private Cloud Computing	Cloud computing	2012
Microsoft SharePoint 2010 Administration: Real-World Skills for MCITP Certification and Beyond	Intranets (Computer networks); Web servers -- Management; Electronic data processing personnel	2011
Microsoft SharePoint 2010 Business Application Blueprints: Master SharePoint Application Development by Building Exciting SharePoint Business Solutions	Intranets (Computer networks)	2012
Microsoft SharePoint 2010 End User Guide: Business Performance Enhancement: Taking the Basics to the Business with No-Coding Solutions for SharePoint 2010: A From-the-Trenches Tutorial Filled with Hints, Tips, and Real World Best Practices for Applying SharePoint 2010 to Your Business	Intranets (Computer networks)	2011

Title	Subject(s)	Year
Microsoft SharePoint 2010 Enterprise Applications on Windows Phone 7: Create Enterprise-Ready Websites and Applications That Access Microsoft SharePoint on Windows Phone 7	Smartphones -- Programming; Windows phone (Computer file)	2011
Microsoft Sharepoint 2010 Quicksteps	Intranets (Computer networks)	2010
Microsoft SharePoint 2013 for Dummies	Intranets (Computer networks)	2013
Microsoft SharePoint Server 2010 Bible	Client/server computing	2010
Microsoft Silverlight 4 and SharePoint 2010 Integration: Techniques, Practical Tips, Hints, and Tricks for Silverlight Interactions with SharePoint	User interfaces (Computer systems)	2010
Microsoft Silverlight 5 and Windows Azure Enterprise Integration	Cloud computing; Database management; SQL server	2012
Microsoft SQL Azure: Enterprise Application Development; Build Enterprise-Ready Applications and Projects with SQL Azure	Cloud computing; SQL server	2010
Microsoft SQL Server 2008 Administration for Oracle DBAs	Client/server computing; Database management; SQL server	2011
Microsoft SQL Server 2008 High Availability: Minimize Downtime, Speed Up Recovery, and Achieve the Highest Level of Availability and Reliability for SQL Server Applications by Mastering the Concepts of Database Mirroring, Log Shipping, Clustering, and Replication	Relational databases; SQL server	2011
Microsoft SQL Server 2008 High Availability with Clustering & Database Mirroring	Relational databases; SQL server; Virtual computer systems	2010
Microsoft SQL Server 2008 R2 Administration Cookbook: Over 70 Practical Recipes for Administering a High-Performance SQL Server 2008 R2 System	Client/server computing; Database management; Relational databases; SQL server	2011
Microsoft SQL Server 2008 R2 Master Data Services: Manage and Maintain Your Organization's Master Data Effectively with Microsoft SQL Server 2008 R2 Master Data Services	Database management; SQL server	2011
Microsoft SQL Server 2012 Administration: Real-World Skills for MCSA Certification and Beyond	Database management; SQL server; Electronic data processing personnel	2013

Title	Subject(s)	Year
Microsoft SQL Server 2012 Bible	SQL server	2012
Microsoft SQL Server 2012 Performance Tuning Cookbook: 80 Recipes to Help You Tune SQL Server 2012 and Achieve Optimal Performance	Client/server computing; SQL server	2012
Microsoft SQL Server 2012 Security Cookbook	SQL server; Computer security	2012
Microsoft SQL Server Reporting Services Recipes for Designing Expert Reports	Client/server computing; SQL server	2010
Microsoft Surface for Dummies	Tablet computers; User interfaces (Computer systems)	2014
Microsoft System Center 2012 Configuration Manager: Administration Cookbook	Client/server computing; Computer networks -- Management	2012
Microsoft System Center 2012 Service Manager Cookbook	Computer networks -- Management	2012
Microsoft System Center Virtual Machine Manager 2012 Cookbook	Information technology -- Management; Operating systems (Computers)	2013
Microsoft Tabular Modeling Cookbook	Client/server computing; Database management; Relational databases	2013
Microsoft Virtualization Secrets: Do What You Never Thought Possible with Microsoft Virtualization	Virtual computer systems	2012
Microsoft Windows 7 Administration Instant Reference	Operating systems (Computers); Microsoft Windows (Computer file)	2011
Microsoft Windows Azure Development Cookbook: Over 80 Advanced Recipes for Developing Scalable Services with the Windows Azure Platform	Cloud computing	2011
Microsoft Windows Communication Foundation 4.0 Cookbook for Developing SOA Applications: Over 85 Easy Recipes for Managing Communication Between Applications	Electronic data processing -- Distributed processing; Microsoft Windows (Computer file)	2010
Microsoft Windows Intune 2.0: Quickstart Administration: Manage Your PCs in the Enterprise Through the Cloud with Microsoft Windows Intune	Electronic data processing -- Distributed processing; Information resources management	2012

Title	Subject(s)	Year
Microsoft Windows Networking Essentials	Computer networks; Internetworking (Telecommunication); Microsoft Windows (Computer file)	2011
Microsoft Windows Security: Essentials	Computer networks; Electronic data processing personnel	2011
Microsoft Windows Server AppFabric Cookbook: 60 Recipes for Getting the Most Ouf of WCF and WF Services, Including the Latest Capabilities in AppFabric 1.1 for Windows Server	Cloud computing	2012
Microsoft WSH and VBScript Programming for the Absolute Beginner	Microsoft Windows (Computer file)	2015
Migrating to Drupal 7: Learn How to Quickly and Efficiently Migrate Content Into Drupal 7 from a Variety of Sources Including Drupal 6 Using Automated Migration and Import Processes	Systems migration	2012
Mobile Access Safety: Beyond BYOD	Computer networks -- Security measures	2013
Mobile Agents in Networking and Distributed Computing	Electronic data processing -- Distributed processing	2012
Mobile Apps	Mobile computing	2014
Mobile Computing: Securing Your Workforce	Mobile computing	2011
Mobile Graphics 3D SoC: From Algorithm to Chip	Mobile computing	2010
Mobile Prototyping with Axure 7	Mobile computing	2013
Mobile Security: How to Secure, Privatize, and Recover Your Devices: Keep Your Data Secure On the Go	Mobile computing	2013
Mobility for SAP	Mobile commerce	2014
Mobilized Marketing: How to Drive Sales, Engagement, and Loyalty Through Mobile Devices	Mobile commerce	2012
Modern Computer Algebra	Computer science -- Mathematics	2013
Monitoring with Opsview: Leverage the Power of Opsview to Effectively Monitor Your Physical, Virtual, and Private Cloud Infrastructure	Cloud computing	2013

Title	Subject(s)	Year
Moodle JavaScript Cookbook: Over 50 Recipes for Making Your Moodle System More Dynamic and Responsive with JavaScript	Java (Computer program language)	2011
MooTools 1.3 Cookbook: Over 110 Highly Effective Recipes to Turbo-Charge the User Interface of Any Web-Enabled Internet Application and Web Page	Mobile computing	2011
Mule ESB Cookbook	Application program interfaces (Computer software)	2013
Multi-Company Project Management: Maximizing Business Results Through Strategic Collaboration	Project management	2010
Multimodality in Mobile Computing and Mobile Devices: Methods for Adaptable Usability	Mobile computing	2010
Multi-Screen Marketing: The Seven Things You Need to Know to Reach Your Customers Across TVs, Computers, Tablets, and Mobile Phones	Electronic commerce	2014
Multithreading in C# 5.0 Cookbook	C++ (Computer program language); Object oriented programming languages	2013
My New iPad: A User's Guide	Tablet computers	2010
My New iPad: A User's Guide (3rd ed)	Tablet computers	2012
My New iPad 2: A User's Guide	Tablet computers	2011
MySQL 5.1 Plugin Development: Extend MySQL to Suit Your Needs with This Unique Guide into the World of MySQL Plugins	Database management; Relational databases	2010
MySQL Database Usage & Administration	Client/server computing; Relational databases	2010
MySQL Management and Administration with Navicat: Master the Tools You Thought You Knew and Discover the Features You Never Knew Existed	Database management	2012
Nagios Core Administration Cookbook: Develop an Integrated Monitoring Solution for Virtually Any Kind of Network	Computer networks -- Management	2013
Nanoscale Communication Networks	Computer networks	2010
NGUI for Unity	User interfaces (Computer systems)	2014

Title	Subject(s)	Year
NetBeans IDE 7 Cookbook: Over 70 Highly Focused Practical Recipes to Maximize Your Output with NetBeans	Java (Computer program language)	2011
NetBeans Platform 6.9 Developer's Guide: Create Professional Desktop Rich-Client Swing Applications Using the World's Only Modular Swing Application Framework	Java (Computer program language)	2010
Network Analysis Using Wireshark Cookbook	Computer networks; Network performance (Telecommunication)	2013
Network Backup with Bacula How-To: Create an Autonomous Backup Solution for Your Computer Network Using Practical, Hands-On Recipes	Data protection	2012
Network Graph Analysis and Visualization with Gephi: Visualize and Analyze Your Data Swiftly Using Dynamic Network Graphs Built with Gephi	Computer networks; Network performance (Telecommunication)	2013
Network Mergers and Migrations: Junos Design and Implementation	Computer networks; Systems migration	2010
Network Security: A Decision and Game-Theoretic Approach	Computer networks -- Security measures	2011
Networking All-in-One for Dummies	Computer networks	2013
Networking: A Beginner's Guide	Computer networks; Internetworking (Telecommunication)	2010
Networking for Dummies	Computer networks	2013
The New Rules of Management: How to Revolutionise Productivity, Innovation and Engagement by Implementing Projects That Matter	Project management	2013
Nginx HTTP Server: Make the Most of Your Infrastructure and Serve Pages Faster Than Ever with Nginx	Computer networks	2013
NHibernate 3 Beginner's Guide	Object-oriented programming (Computer science)	2011
NHibernate 3.0 Cookbook: 70 Incredibly Powerful Recipes for Using the Full Spectrum of Solutions in the NHibernate Ecosystem	Object-oriented programming (Computer science)	2010

Title	Subject(s)	Year
Nmap 6: Network Exploration and Security Auditing Cookbook; A Complete Guide to Mastering Nmap 6 and Its Scripting Engine, Covering Practical Tasks for Penetration Testers and System Administrators	Computer security	2012
The NSA Report: Liberty and Security in a Changing World	Data protection	2014
OAuth 2.0 Identity and Access Management Patterns	Computer security	2013
Object-Oriented JavaScript	Object-oriented programming (Computer science)	2013
Object-Oriented Programming in ColdFusion: Break Free from Procedural Programming and Learn How to Optimize Your Applications and Enhance Your Skills Using Objects and Design Patterns	Object-oriented programming (Computer science)	2010
Objective-C for iPhone Developers: A Beginner's Guide	Objective-C (Computer program language); Object-oriented programming (Computer science); iPhone (Smartphone); Mobile computing	2010
Objective-C Programming for Dummies	Objective C (Computer program language)	2012
Objective-C Recipes: A Problem-Solution Approach	Macintosh (Computer) -- Programming; Object oriented programming (Computer science); Objective C (Computer program language); iOS (Electronic resource)	2012
OCA Oracle Database 11g: Database Administration I: A Real-World Certification Guide: Learn How to Become an Oracle-Certified Database Administrator	Database management; Electronic data processing personnel	2013
OCA Oracle Database: SQL Certified Expert Exam Guide: (Exam 1Z0-047)	Database management; Electronic data processing personnel	2010
OCA/OCP Oracle Database 11g All-in-One Exam Guide: Exams 1Z0-051, 1Z0-052, 1Z0-053	Relational databases; Electronic data processing personnel	2010
OCP: Oracle Database 12c Administrator Certified Professional: Study Guide	Database management	2014

Title	Subject(s)	Year
OData Programming Cookbook for .NET Developers: 70 Fast-Track, Example-Driven Recipes with Clear Instructions and Details for OData Programming with .NET Framework	Computer networks	2012
Office 2010: The Missing Manual	Relational databases	2010
Office 2013 Simplified: Step-by-Step Instructions for Easy Learning	Microsoft Windows (Computer file); Database management	2013
OpenAM: Written and Tested with OpenAM Snapshot 9: The Single Sign-On (SSO) Tool for Securing Your Web Applications in a Fast and Easy Way	Computer networks; Electronic commerce -- Security measures	2011
OpenCart 1.4 Beginner's Guide: Build and Manage Professional Online Shopping Stores Easily Using OpenCart	Electronic commerce	2010
OpenCV Computer Vision with Python: Learn to Capture Videos, Manipulate Images, and Track Objects with Python Using the OpenCV Library	Operating systems (Computers)	2013
OpenNebula 3 Cloud Computing: Set Up, Manage, and Maintain Your Cloud and Learn Solutions for Datacenter Virtualization with this Step-by-Step Practical Guide	Cloud computing	2012
OpenSceneGraph 3 Cookbook	Application program interfaces (Computer software)	2012
OpenSceneGraph 3.0: Beginner's Guide: Create High-Performance Virtual Reality Applications with OpenSceneGraph, One of the Best 3D Graphics Engines	Application program interfaces (Computer software)	2010
OpenStack Cloud Computing Cookbook	Cloud computing	2013
OpenStack Cloud Computing Cookbook	Cloud computing	2012
OpenVPN 2 Cookbook: 100 Simple and Incredibly Effective Recipes for Harnessing the Power of the OpenVPN 2 Network	Extranets (Computer networks); Operating systems (Computers)	2011
Oracle 11g Anti-Hacker's Cookbook	Computer security	2012
Oracle 11g R1/R2 Real Application Clusters Essentials: Design, Implement, and Support Complex Oracle 11g RAC Environments for Real-World Deployments	Database management; Relational databases	2011

Title	Subject(s)	Year
Oracle 12c for Dummies	Database management	2014
Oracle Advanced PL/SQL Developer Professional Guide: Master Advanced PL/SQL Concepts Along with Plenty of Example Questions for 1Z0-146 Examination	Database management; Relational databases; Electronic data processing personnel	2012
Oracle BPM Suite 11g: Advanced BPMN Topics: Master Advanced BPMN for Oracle BPM Suite Including Inter-Process Communication, Handling Arrays, and Exception Management	Database management; Relational databases	2011
Oracle Certified Associate, Java SE 7 Programmer Study Guide	Database management; Electronic data processing personnel	2012
Oracle CRM on Demand Deployment Guide	Relational databases	2010
Oracle Data Guard 11gR2 Administration Beginner's Guide: Learn How to Build and Maintain Data Guard Configurations with Real-Life, Practical Examples	Data protection; Data recovery (Computer science)	2013
Oracle Database 11gR2 Performance Tuning Cookbook: Over 80 Recipes to Help Beginners Achieve Better Performance from Oracle Database Applications	Database management; Relational databases	2012
Oracle Database Administration for Microsoft SQL Server DBAs	Database management	2011
Oracle Database Performance and Scalability: A Quantitative Approach	Database management	2012
Oracle Database XE 11gR2 Jump Start Guide: Build and Manage Your Oracle Database 11gXE Environment with This Fast Paced, Practical Guide	Database management	2012
Oracle E-business Suite 12 Financials Cookbook: Take the Hard Work Out of Your Daily Interactions with E-business Suite Financials by Using the 50+ Recipes from This Cookbook	Electronic commerce	2011
Oracle E-Business Suite R12 Core Development and Extension Cookbook: Over 60 Recipes to Develop Core Extensions in Oracle E-Business Suite R12	Electronic commerce	2012

Title	Subject(s)	Year
Oracle E-Business Suite R12 Integration and OA Framework Development and Extension Cookbook	Electronic commerce	2013
Oracle E-business Suite R12 Supply Chain Management: Drive Your Supply Chain Processes with Oracle E-business Suite R12 Supply Chain Management to Achieve Measurable Business Gains	Database management	2010
Oracle Enterprise Manager 12c Administration Cookbook: Over 50 Practical Recipes to Install, Configure, and Monitor Your Oracle Setup Using Oracle Enterprise Manager	Relational databases	2013
Oracle Enterprise Manager Cloud Control 12c: Managing Data Center Chaos; Get to Grips with the Latest Innovative Techniques for Managing Data Center Chaos Including Performance Tuning, Security Compliance, Patching and More	Cloud computing	2012
Oracle Enterprise Manager Grid Control 11g R1: Business Service Management: A Hands-On Guide to Modeling and Managing Business Services Using Oracle Enterprise Manager 11gR1	Database management	2011
Oracle Essbase & Oracle OLAP: The Guide to Oracle's Multidimensional Solution	Database management	2010
Oracle Essbase 11 Development Cookbook: Over 90 Advanced Development Recipes to Build and Take Your Oracle Essbase Applications Further	Database management	2012
Oracle Identity and Access Manager 11g for Administrators: Administer Oracle Identity and Access Management: Installation, Configuration, and Day-to-Day Tasks	Computer security; Computer networks; Database security	2011
Oracle Primavera P6 Version 8: Project and Portfolio Management	Project management -- Computer programs	2012
Oracle RMAN 11g: Backup and Recovery	Data recovery (Computer science); Relational databases	2010

Title	Subject(s)	Year
Oracle Service Bus 11g Development Cookbook: Over 80 Practical Recipes to Develop Service and Message-Oriented Solutions on the Oracle Service Bus	Electronic commerce; Service oriented architecture (Computer science)	2012
Oracle SOA BPEL Process Manager 11gR1: A Hands-On Tutorial: Your Step-by-Step, Hands-On Guide to Oracle SOA BPEL PM 11gR1	Service oriented architecture (Computer science)	2013
Oracle SOA Suite 11g Administrator's Handbook	Service oriented architecture (Computer science)	2012
Oracle SOA Suite 11g Developer's Cookbook: Over 65 High-Level Recipes for Extending Your Oracle SOA Applications and Enhancing Your Skills with Expert Tips and Tricks for Developers	Computer network architectures; Service oriented architecture (Computer science)	2012
Oracle SOA Suite 11g Handbook	Service oriented architecture (Computer science)	2011
Oracle SOA Suite 11g R1 Developer's Guide: Develop Service-Oriented Architecture Solutions with the Oracle SOA Suite	Computer network architectures; Service oriented architecture (Computer science)	2010
Oracle SOA Suite Performance Tuning Cookbook: Over 100 Recipes to Get the Best Performance from Your Oracle SOA 11g Infrastructure	Business enterprises -- Computer networks; Computer architecture; Computer network architectures; Service oriented architecture (Computer science)	2013
Oracle Solaris 11: First Look: A Sneak Peek at All the Important New Features and Functionality of Oracle Solaris 11	Database management	2013
Oracle SQL: A Beginner's Tutorial	Database management	2014
Oracle WebLogic Server 11g PS2 Administration Essentials: Install, Configure, Deploy, and Administer Java EE Applications with Oracle WebLogic Server	Client/server computing; Java (Computer program language)	2011
Oracle WebLogic Server 12c Advanced Administration Cookbook: Over 60 Advanced Recipes to Configure, Troubleshoot, and Tune Oracle WebLogic Server	Client/server computing; Java (Computer program language)	2013

Title	Subject(s)	Year
Oracle WebLogic Server 12c: First Look: A Sneak Peek at Oracle's Newly Launched WebLogic 12c, Guiding You Through New Features and Techniques	Client/server computing; Java (Computer program language)	2012
OS X Mavericks: The Fast and Easy Way to Learn	Operating systems (Computers); Mac OS	2014
OS X Mavericks All-in-One for Dummies	Operating systems (Computers); Mac OS	2014
OS X Mountain Lion for Dummies	Operating systems (Computers); Mac OS	2012
OS X Mountain Lion Server for Dummies	Operating systems (Computers); Mac OS	2012
OS X Mountain Lion Simplified	Operating systems (Computers); Mac OS	2012
OSGi and Apache Felix 3. 0 Beginner's Guide: Build Your Very Own OSGi Applications Using the Flexible and Powerful Felix Framework	Java (Computer program language)	2010
OSx86: Creating a Hackintosh	Mac OS	2010
Packet Tracer Network Simulator	Computer networks	2014
PCs All-in-One for Dummies	Microsoft Windows (Computer file)	2013
Penetration Testing: A Hands-On Introduction to Hacking	Kali Linux; Penetration testing (Computer security)	2014
Pentaho Data Integration 4 Cookbook: Over 70 Recipes to Solve ETL Problems Using Pentaho Kettle	Database management	2011
Pentaho Data Integration Beginner's Guide	Database management	2013
Pentaho Data Integration Cookbook: Over 100 Recipes for Building Open Source ETL Solutions with Pentaho Data Integration	Database management	2013
Pentaho Kettle Solutions: Building Open Source ETL Solutions with Pentaho Data Integration	Database management	2010
Performance-Based Project Management: Increasing the Probability of Project Success	Project management	2014
Perspectives and Techniques for Improving Information Technology Project Management	Information technology -- Management; Information technology projects; Project management	2013

Title	Subject(s)	Year
pfSense 2 Cookbook: A Practical, Example-Driven Guide to Configure Even the Most Advanced Features of pfSense 2	Firewalls (Computer security)	2011
PhoneGap: Beginner's Guide; Build Cross-Platform Mobile Applications with the PhoneGap Open Source Development Framework	Smartphones -- Programming; Mobile computing	2011
PhoneGap 2.x Mobile Application Development Hotshot: Creating Exciting Apps for Mobile Devices Using PhoneGap	Mobile computing	2013
PhoneGap Mobile Application Development Cookbook	Mobile computing	2012
PHP Application Development with NetBeans Beginner's Guide	Java (Computer program language)	2012
PHP, mySQL, JavaScript & HTML5 All-in-One for Dummies	Relational databases	2013
PHP jQuery Cookbook: Over 60 Simple but Highly Effective Recipes to Create Interactive Web Applications Using PHP with jQuery	Electronic commerce	2010
Pioneers of Digital: Success Stories from Leaders in Advertising, Marketing, Search, and Social Media	Electronic commerce	2012
Play Framework Cookbook: Over 60 Incredibly Effective Recipes to Take You Under the Hood and Leverage Advanced Concepts of the Play Framework	Java (Computer program language)	2011
Plone 3 Intranets: Design, Build, and Deploy a Reliable, Full-Featured, and Secure Plone-Based Enterprise Intranet Easily from Scratch	Intranets (Computer networks)	2010
Plone 3.3 Site Administration: Manage Your Site Like a Plone Professional	Database management	2010
The Plugged-In Manager: Get in Tune With Your People, Technology, and Organization to Thrive	Information technology -- Management	2012
PMP Certification: A Beginner's Guide	Project management	2010
PMP Certification All-in-One for Dummies	Project management	2013
PMP: Project Management Professional Exam: Review Guide	Project management	2011
PostgreSQL 9.0: High Performance	Database management	2010

Title	Subject(s)	Year
PostgreSQL 9 Administration Cookbook: Solve Real-World PostgreSQL Problems with Over 100 Simple, Yet Incredibly Effective Recipes	Database management	2010
PostgreSQL Replication	Database management	2013
PostgreSQL Server Programming: Extend PostgreSQL and Integrate the Database Layer Into Your Development Framework	Database management	2013
PowerShell for Microsoft SharePoint 2010 Administrators	Intranets (Computer networks)	2011
PowerShell 3.0 Advanced Administration Handbook: A Fast-Paced PowerShell Guide with Real-World Scenarios and Detailed Solutions	Operating systems (Computers) -- Programming	2013
Practical Change Management for IT Projects: Transform Your IT Project and Make Change Stick with This Step-by-Step Guide	Information technology -- Management; Project management; Information technology projects	2014
Practical Data Migration	Database management	2012
A Practical Guide to Reducing IT Costs	Information technology -- Management	2010
Practical Malware Analysis: The Hands-On Guide to Dissecting Malicious Software	Computer security	2012
Practical Packet Analysis: Using Wireshark to Solve Real-World Network Problems	Computer network protocols	2011
Practical SQL Queries for Microsoft SQL Server 2008 R2	Relational databases	2010
The Practice of Network Security Monitoring: Understanding Incident Detection and Response	Computer networks -- Security measures	2013
Prestashop 1.3 Beginner's Guide: Build and Customize Your Online Store with This Speedy, Lightweight E-commerce Solution	Electronic commerce	2013
PrestaShop 1.5 Beginner's Guide: Build Your Own Attractive Online Store with This Fast and Flexible E-commerce Solution	Business enterprises -- Computer networks; Electronic commerce	2013
Prince2 Study Guide	Project management	2012
Principle Advancements in Database Management Technologies: New Applications and Frameworks	Database management	2010

Title	Subject(s)	Year
The Principles of Object-Oriented JavaScript	Object oriented programming languages	2014
Process Algebra: Equational Theories of Communicating Processes	Electronic data processing -- Distributed processing	2010
Professional Access 2013 Programming	Database management	2013
Professional Alfresco: Practical Solutions for Enterprise Content Management	Database management	2010
Professional Android 2 Application Development	Android (Electronic resource); Mobile computing	2010
Professional Android 4 Application Development	Android (Electronic resource); Mobile computing	2012
Professional Android Programming with Mono for Android and .NET/C#	Android (Electronic resource); Mobile computing	2012
Professional Android Sensor Programming	Android (Electronic resource); Mobile computing	2012
Professional Augmented Reality Browsers for Smartphones: Programming for Junaio, Layar, and Wikitude	Smartphones -- Programming	2011
Professional Business Connectivity Services in SharePoint 2010	Database management	2011
Professional C# 5.0 and .NET 4.5.1	C++ (Computer program language)	2014
Professional C# 2012 and .NET 4.5	C++ (Computer program language)	2013
Professional Cocoa Application Security	Computer security	2010
Professional Cross-Platform Mobile Development in C#	C++ (Computer program language); Mobile computing	2012
Professional Flash Lite Mobile Development: Build Flash Applications for Mobile Devices	Mobile computing	2010
Professional Functional Programming in C#: Classic Programming Techniques for Modern Projects	C++ (Computer program language)	2011
Professional Hadoop Solutions	Cloud computing; Electronic data processing -- Distributed processing	2013
Professional iOS Database Application Programming	Mobile computing	2013
Professional iOS Network Programming: Connecting the Enterprise to the iPhone and iPad	iOS (Electronic resource); iPhone (Smartphone) -- Programming; iPad (Computer) -- Programming	2012
Professional iOS Programming	iOS (Electronic resource); iPhone (Smartphone) -- Programming; iPad (Computer) -- Programming	2014

Title	Subject(s)	Year
Professional iPhone Programming with MonoTouch and .NET/C#	iPhone (Smartphone) -- Programming; C++ (Computer program language)	2010
Professional Java for Web Applications: Featuring Websockets, Spring Framework, JPA Hibernate, and Spring Security	Java (Computer program language)	2014
Professional Microsoft PowerPivot for Excel and SharePoint	Client/server computing; SQL server	2010
Professional Microsoft SQL Server 2012 Administration	Database management; SQL server	2012
Professional Microsoft SQL Server 2012 Analysis Services with MDX and DAX	Database management; Client/server computing; Relational databases; SQL server	2012
Professional Microsoft SQL Server 2012 Integration Services	Database management; Relational databases	2012
Professional Microsoft SQL Server 2012 Reporting Services	Database management; SQL server	2012
Professional Mobile Application Development	Mobile computing -- Programming	2012
Professional Mobile Web Development with WordPress, Joomla!, and Drupal	Mobile computing	2011
Professional NFC Application Development for Android	Android (Electronic resource); Mobile computing	2013
Professional NoSQL	Database management	2011
Professional Papervision3D	Object-oriented programming (Computer science)	2010
Professional Parallel Programming with C#: Master Parallel Extensions with .net 4	C++ (Computer program language)	2011
Professional Plone 4 Development: Build Robust, Content-Centric Web Applications with Plone 4	Database management	2011
Professional SharePoint 2010 Administration	Intranets (Computer networks)	2010
Professional SharePoint 2010 Branding and User Interface Design	Intranets (Computer networks)	2011
Professional SharePoint 2010 Development	Intranets (Computer networks)	2010
Professional SharePoint 2010 Development (2nd ed)	Intranets (Computer networks)	2012
Professional SharePoint 2010: Enterprise Architect's Guidebook	Intranets (Computer networks)	2012

Title	Subject(s)	Year
Professional SharePoint 2010 Field Guide	Intranets (Computer networks; Web servers -- Management	2012
Professional Sharepoint 2013 Administration	Intranets (Computer networks)	2013
Professional Silverlight 4	User interfaces (Computer systems)	2010
Professional SQL Server 2008 Internals and Troubleshooting	Database management; SQL server	2010
Professional SQL Server 2012 Internals and Troubleshooting	Database management; Client/server computing; SQL server	2013
Professional Test-Driven Development with C# Developing Real World Applications with TDD	C++ (Computer program language)	2011
Professional Ubuntu Mobile Development	Mobile computing; Operating systems (Computers)	2010
Professional Unified Communications Development with Microsoft Lync Server 2010	Client/server computing	2011
Professional WCF 4: Windows Communication Foundation with .NET 4	Microsoft Windows (Computer file)	2010
Professional Windows 7 Development Guide	Operating systems (Computers); Microsoft Windows (Computer file)	2011
Professional Windows Phone 7 Application Development: Building Applications and Games Using Visual Studio, Silverlight, and XNA	Smartphones -- Programming	2011
Professional Windows 8 Programming: Application Development with C# and XAML	Operating systems (Computers); Microsoft Windows (Computer file)	2013
Professional Windows Phone 7 Application Development: Building Applications and Games Using Visual Studio, Silverlight, and XNA	Smartphones -- Programming; Windows phone (Computer file)	2011
Professional Windows Phone 7 Game Development: Creating Games uUsing XNA Game Studio 4	Windows phone (Computer file)	2011
Professional Xcode 3	Operating systems (Computers)	2010
Professional XMPP Programming with JavaScript and jQuery	Computer network protocols	2010

Title	Subject(s)	Year
Programming ArcGIS 10.1 with Python Cookbook: Over 75 Recipes to Help You Automate Geoprocessing Tasks, Create Solutions, and Solve Problems for ArcGIS with Python	Graphical user interfaces (Computer systems)	2013
Programming Business Applications for the Android Tablet	Android (Electronic resource); Tablet computers	2014
Programming Microsoft's Clouds: Windows Azure and Office 365	Cloud computing	2012
Project Management: A Practical Guide	Project management	2010
Project Management: A Systems Approach to Planning, Scheduling, and Controlling	Project management	2013
Project Management Accounting: Budgeting, Tracking, and Reporting Costs and Profitability	Project management	2011
The Project Management Answer Book	Project management	2011
Project Management: Case Studies	Project management	2013
Project Management for Dummies	Project management	2011
Project Management for Dummies (4th ed.)	Project management	2013
Project Management for Non-Project Managers	Project management	2012
Project Management Jumpstart	Project management	2011
Project Management Leadership: Building Creative Teams	Project management	2014
Project Management the Agile Way: Making It Work in the Enterprise	Project management	2010
The Project Management Tool Kit: 100 Tips and Techniques for Getting the Job Done Right (3rd ed.)	Project management	2014
The Project Management Tool Kit: 100 Tips and Techniques for Getting the Job Done Right (2nd ed.)	Project management	2010
Project-Oriented Leadership	Project management	2010
Project Pain Reliever: A Just-in-Time Handbook for Anyone Managing Projects	Project management	2012
Project Planning Scheduling & Control: The Ultimate Hands-On Guide to Bringing Projects in on Time and on Budget	Project management	2011
Project-Oriented Leadership	Project management	2010

Title	Subject(s)	Year
Project Workflow Management: A Business Process Approach	Project management	2014
Protecting Your Health Privacy: A Citizen's Guide to Safeguarding the Security of Your Medical Information	Data protection	2011
The Puppet 3 Cookbook	Client/server computing; Database management	2013
PySide GUI Application Development	Graphical user interfaces (Computer systems)	2013
Python 3 Object Oriented Programming: Harness the Power of Python 3 Objects	Object oriented programming (Computer science); Object oriented programming languages	2010
Python Multimedia Beginner's Guide: Learn How to Develop Multimedia Applications Using Python with This Practical Step-by-Step Guide	Object-oriented programming (Computer science)	2010
Quality and Communicability for Interactive Hypermedia Systems: Concepts and Practices for Design	User interfaces (Computer systems)	2010
Quality of Service Architectures for Wireless Networks: Performance Metrics and Management	Wireless LANs; Network performance (Telecommunication)	2010
A Quick Start Guide to Cloud Computing: Moving Your Business Into the Cloud	Cloud computing; Information technology -- Management	2010
A Quick Start Guide to Online Selling: Sell Your Product on eBay, Amazon and Other Online Marketplaces	Electronic commerce	2010
Raspberry Pi for Secret Agents: Turn Your Raspberry Pi Into Your Very Own Secret Agent Toolbox with This Set of Exciting Projects!	Raspberry Pi (Computer)	2013
Raspberry Pi Media Center: Transform Your Raspberry Pi Into a Full-Blown Media Center Within 24 hours	Raspberry Pi (Computer)	2013
Raspberry Pi Projects	Raspberry Pi (Computer)	2014
Raspberry Pi Super Cluster	Raspberry Pi (Computer)	2013
Raspberry Pi User Guide	Raspberry Pi (Computer)	2012
Raspberry Pi User Guide (2nd ed.)	Operating systems (Computers); Raspberry Pi (Computer)	2014

Title	Subject(s)	Year
Red Hat Enterprise Linux 6 Administration: Real World Skills for Red Hat Administrators	Linux; Operating systems (Computers)	2013
Real World SharePoint 2010: Indispensable Experiences from 22 MVPs	Intranets (Computer networks)	2011
Reinventing Discovery: The New Era of Networked Science	Information networks	2012
Reinventing Professional Services: Building Your Business in the Digital Marketplace	Information technology -- Management	2011
Rescue the Problem Project: A Complete Guide to Identifying, Preventing, and Recovering from Project Failure	Project management	2011
Reshaping Retail: Why Technology is Transforming the Industry and How to Win in the New Consumer Driven World	Electronic commerce	2013
Responsive Web Design with jQuery	Mobile computing	2013
Rhomobile Beginner's Guide: Step-by-Step Instructions to Build an Enterprise Mobile Web Application from Scratch	Mobile computing	2011
Risk Factors in Computer-Crime Victimization	Computer security	2010
Robotium Automated Testing for Android	Android (Electronic resource); Mobile computing	2013
Ruby and MongoDB Web Development Beginner's Guide: Create Dynamic Web Applications by Combining the Power of Ruby and MongoDB	Database management	2012
Ruby Under a Microscope: Learning Ruby Internals Through Experiment	Object oriented programming (Computer science)	2013
Safeguarding Critical E-documents: Implementing a Program for Securing Confidential Information Assets	Computer security; Database security	2012
SAP HANA Cookbook	Database management	2013
SAP HANA Starter: Everything You Need to Know to Be Able to Build Your First SAP HANA Standalone Application!	Database management	2012
SAP NetWeaver MDM 7.1 Administrator's Guide: Don't Just Manage - Excel at Managing Your Master Data with SAP NetWeaver MDM 7.1	Computer networks -- Management; Database management	2011

Title	Subject(s)	Year
Scalable Fuzzy Algorithms for Data Management and Analysis: Methods and Design	Database management	2010
SCJA Sun Certified Java Associate: Study Guide (Exam CX-310-019)	Operating systems (Computers); Java (Computer program language); Electronic data processing personnel	2010
Security Administrator Street Smarts: A Real World Guide to CompTIA Security+ Skills	Computer networks; Computer security; Electronic data processing personnel	2011
Security Information and Event Management (SIEM) Implementation	Computer networks -- Security measures	2011
Securing WebLogic Server 12c : Learn to Develop, Administer, and Troubleshot Your WebLogic Server	Computer security	2012
Semantic Enterprise Application Integration for Business Processes: Service-Oriented Frameworks	Service oriented architecture (Computer science)	2010
Sencha MVC Architecture	Mobile computing	2012
Sencha Touch Mobile JavaScript Framework: Build Web Applications for Apple iOS and Google Android Touchscreen Devices with This First HTML5 Mobile Framework: [Community Experience Distilled]	Java (Computer program language)	2012
Server-Side GPS and Assisted-GPS in Java	Java (Computer program language)	2010
Service Oriented Architecture: 68 Most Asked Questions: What You Need To Know	Computer network architectures; Service oriented architecture (Computer science)	2013
Service-Oriented Architecture: An Integration Blueprint: A Real-World SOA Strategy for the Integration of Heterogeneous Enterprise Systems…	Service oriented architecture (Computer science)	2010
Servlet and JSP: A Tutorial	Java (Computer program language)	2012
SharePoint 2010 Administration: Instant Reference	Intranets (Computer networks); Web servers -- Management	2011
SharePoint 2010 Disaster Recovery Guide	Intranets (Computer networks)	2010
Sharepoint 2013: Branding and User Interface Design	User interfaces (Computer systems)	2013
Sharepoint 2013 WCM Advanced Cookbook: Over 110 Recipes to Engineer Web Content and Master SharePoint 2013	Intranets (Computer networks)	2014

Title	Subject(s)	Year
SharePoint Server 2010 Enterprise Content Management	Intranets (Computer networks)	2011
Shell Scripting: Expert Recipes for Linux, Bash, and More	Linux; Programming languages (Electronic computers)	2011
Signals & Systems for Dummies	System analysis	2013
Silverlight 4 User Interface Cookbook: Build and Implement Rich, Standard-Friendly User Interfaces with Silverlight and Expression Blend	User interfaces (Computer systems)	2010
SilverStripe 2.4 Module Extension, Themes, and Widgets: Beginner's Guide: Create Smashing SilverStripe Applications by Extending Modules, Creating Themes, and Adding Widgets	Database management	2011
Smart Data: Enterprise Performance Optimization Strategy	Information resources management; Database management	2010
Smashing Android UI: Responsive User Interfaces and Design Patterns for Android Phones and Tablets	Android (Electronic resource); Mobile computing; User interfaces (Computer systems)	2012
Smashing Mobile Web Development: Going Mobile with HTML5, CSS3 and JavaScript	Mobile computing -- Programming	2013
Smashing UX Design: Foundations for Designing Online User Experiences	Electronic commerce	2012
SOA Made Simple: Discover the True Meaning Behind the Buzzword That Is "Service Oriented Architecture"	Computer network architectures; Service oriented architecture (Computer science); Information resources management; Cloud computing	2012
The Social Media Bible: Tactics, Tools, and Strategies for Business Success	Electronic commerce	2010
The Social Media MBA: Your Competitive Edge in Social Media Strategy Development and Delivery	Information technology -- Management	2012
Software and Systems Safety: Specification and Verification	Computer security	2011
Software Defined Networking with OpenFlow	Computer network architectures	2013

Title	Subject(s)	Year
Solarwinds Orion Network Performance Monitor: An Essential Guide for Installing, Implementing, and Calibrating Solarwinds Orion NPM	Computer networks; Network performance (Telecommunication)	2013
SolarWinds Server and Application Monitor: Deployment and Administration	Computer network protocols; Computer networks	2013
Special Design Topics in Digital Wideband Receivers	Computer network architectures	2010
Spring Data	Java (Computer program language)	2012
Spring MVC: A Tutorial	Java (Computer program language)	2014
Spring Roo 1.1 Cookbook: Over 60 Recipes to Help You Speed Up the Development of Your Java Web Applications Using the Spring Roo Development Tool	Java (Computer program language)	2011
Spring Security 3.1: Secure Your Web Applications from Hackers with the Step-by-Step Guide	Computer security	2012
SQL for Dummies (7th ed)	Database management; Relational databases	2010
SQL for Dummies (8th ed)	Relational databases	2013
SQL Server 2008 Administration: Real World Skills for MCITP Certification and Beyond	SQL server; Electronic data processing personnel	2010
SQL Server 2012 Reporting Services Blueprints	Client/server computing; Relational databases; SQL server	2013
SQL Server 2012 with PowerShell V3 Cookbook	Database management; SQL server	2012
SQL Server Analysis Services 2012 Cube Development Cookbook	Client/server computing; Relational databases; SQL server	2013
SQL, the Complete Reference	Relational databases	2010
Stakeholder-Oriented Project Management: Tools and Concepts	Project management	2011
Starting & Running an Online Business for Dummies	Electronic commerce	2011
Straight to the Top: CIO Leadership in a Mobile, Social, and Cloud-Based World	Information resources management; Information technology -- Management	2013
Strategic IT: Best Practices for Managers and Executives	Information technology -- Management	2013
Strategic Project Management	Project management	2012

Title	Subject(s)	Year
Strategic Project Management Transformation: Delivering Maximum ROI & Sustainable Business Value	Project management	2011
Succeeding in the Project Management Jungle: How to Manage the People Side of Projects	Project management	2011
Successful Project Management (3rd ed.)	Project management	2011
Successful Project Management (4th ed.)	Project management	2013
Surface for Dummies	Microsoft Windows (Computer file); Tablet computers	2013
System Center Configuration Manager 2007 R3 Complete	Computer networks	2012
System Design for Telecommunication Gateways	Internetworking (Telecommunication)	2011
Tableau Data Visualization Cookbook	Database management	2013
Talend Open Studio Cookbook	Database management	2013
The Tangled Web: A Guide to Securing Modern Web Applications	Computer security; Computer networks	2012
Tcl 8.5 Network Programming: Build Network-Aware Applications Using Tcl, a Powerful Dynamic Programming Language	CGI (Computer network protocol); Computer networks; Programming languages	2010
Teach Yourself Visually iPad	Tablet computers	2014
Teach Yourself Visually PCs	Microsoft Windows (Computer file)	2011
Teach Yourself Visually Raspberry Pi	Raspberry Pi (Computer)	2014
Teach Yourself Visually Windows 8.1	Operating systems (Computers); Microsoft Windows (Computer file)	2014
Teaching with iPad How-To	Tablet computers	2012
Ten Steps to ITSM Success: A Practitioner's Guide to Enterprise IT Transformation	Information technology -- Management	2013
Think Bigger: Developing a Successful Big Data Strategy for Your Business	Database management; Information technology -- Management	2014
The Third Screen: Marketing to Your Customers in a World Gone Mobile	Business enterprises -- Computer networks; Mobile commerce; Smartphones	2011
Threat Modeling: Designing for Security	Computer networks -- Security measures; Computer security	2014
Tkinter GUI Application Development Hotshot	Graphical user interfaces (Computer systems)	2013

Title	Subject(s)	Year
Todd Lammle's CCNA/CCENT IOS Commands Survival Guide: Exams 100-101, 200-101, and 200-120	Cloud computing; iOS (Electronic resource)	2014
Toward Corporate IT Standardization Management	Information technology -- Management	2010
Transforming IT Culture: How to Use Social Intelligence, Human Factors, and Collaboration to Create an IT Department That Outperforms	Information technology -- Management	2013
Troux Enterprise Architecture Solutions: Driving Business Value Through Strategic IT Alignment	Information technology -- Management	2010
The Tuning of Place: Sociable Spaces and Pervasive Digital Media	Mobile computing	2010
Ubuntu for Non-Geeks: A Pain-Free, Project-Based, Get-Things-Done Guide	Linux; Operating systems (Computers)	2010
Ubuntu Linux Bible: Featuring Ubuntu 10.04 LTS	Operating systems (Computers); Linux; Ubuntu (Electronic resource)	2010
Ubuntu Linux Toolbox: 1000+ Commands for Ubuntu and Debian Power Users	Operating systems (Computers); Linux; Ubuntu (Electronic resource)	2013
UDK iOS Game Development Beginner's Guide	iPad (Computer) -- Programming; iPhone (Smartphone) -- Programming	2012
Unleashing the Power of IT: Bringing People, Business, and Technology Together	Information technology -- Management	2014
Using Activity Domain Theory for Managing Complex Systems	Network analysis (Planning)	2010
Using Social Media for Global Security	Computer security	2013
VANETs: Vehicular Applications and Inter-Networking Technologies	Computer networks	2010
VCP: VMware Certified Professional on vSphere 4 Study Guide	Electronic data processing personnel; Virtual computer systems	2010
VCP5: VMware Certified Professional on vSphere 5: Study Guide	Virtual computer systems	2012
Virtualization Essentials	Virtual computer systems	2012
Virtualization Security: Protecting Virtualized Environments	Virtual computer systems	2013
Virtualizing Microsoft Tier 1 Applications with VMware Vsphere 4	Virtual computer systems	2010
Visual C# Game Programming for Teens	C++ (Computer program language)	2012

Title	Subject(s)	Year
Visual Intelligence: Microsoft Tools and Techniques for Visualizing Data	Microsoft Windows (Computer file)	2013
VMware ESXi: Planning, Implementation, and Security	Virtual computer systems	2011
VMware Horizon Mirage Essentials: Manage Your Entire Desktop Environment with a Single Management Tool - VMware Horizon Mirage	Operating systems (Computers)	2013
VMware Horizon View 5.3 Design Patterns and Best Practices	Virtual computer systems	2013
VMware Private Cloud Computing with vCloud Director	Cloud computing; Virtual computer systems	2013
VMware vCloud Director Cookbook	Cloud computing	2013
VMware View 5 Desktop Virtualization Solutions: A Complete Guide to Planning and Designing Solutions Based on VMware View 5	Virtual computer systems	2012
VMware vSphere Design	Virtual computer systems	2011
VMware vSphere Design (2nd ed.)	Operating systems (Computers); Virtual computer systems	2013
VMware Workstation - No Experience Necessary	Virtual computer systems	2013
Wars of Disruption and Resilience: Cybered Conflict, Power, and National Security	Computer networks -- Security measures	2011
WCF 4.5 Multi-Layer Services Development with Entity Framework: Build SOA Applications with Microsoft Platforms with this Hands-On Guide	Computer network architectures	2012
Web Application Defender's Cookbook: Battling Hackers and Protecting Users	Computer security; Computer networks -- Security measures	2012
The Web Application Hacker's Handbook: Finding and Exploiting Security Flaws	Computer security	2011
Web Commerce Security: Design and Development	Computer security; Computer networks -- Security measures	2011
Web Copy That Sells: The Revolutionary Formula for Creating Killer Copy That Grabs Their Attention and Compels Them to Buy	Electronic commerce	2013

Title	Subject(s)	Year
Web Penetration Testing with Kali Linux: A Practical Guide to Implementing Penetration Testing Strategies on Websites, Web Applications, and Standard Web Protocols with Kali Linux	Computer networks -- Security measures; Penetration testing (Computer security)	2013
Web Service APIs and Libraries	Application program interfaces (Computer software)	2013
What's New in SQL Server 2012: Unleash the New Features of SQL Server 2012	Client/server computing; SQL server	2012
Windows 7 Desktop Support and Administration: Real World Skills for MCITP Certification and Beyond	Microsoft Windows (Computer file); Electronic data processing personnel	2010
Windows 7 Quicksteps	Operating systems (Computers); Microsoft Windows (Computer file)	2010
Windows 7 Tweaks: A Comprehensive Guide to Customizing, Increasing Performance, and Securing Microsoft Windows 7	Operating systems (Computers); Microsoft Windows (Computer file)	2010
Windows 8 & Office 2013 for Dummies	Operating systems (Computers); Microsoft Windows (Computer file)	2013
Windows 8 Tweaks	Operating systems (Computers); Microsoft Windows (Computer file)	2013
Windows 8.1 Bible	Operating systems (Computers); Microsoft Windows (Computer file)	2014
Windows 8.1 All-in-One for Dummies	Operating systems (Computers); Microsoft Windows (Computer file)	2014
Windows 8.1 for Dummies	Operating systems (Computers); Microsoft Windows (Computer file)	2013
Windows 8.1 Simplified	Operating systems (Computers); Microsoft Windows (Computer file)	2014
Windows Azure and ASP.NET MVC Migration	Cloud computing	2013
Windows Azure Programming Patterns for Start-Ups	Cloud computing	2012
Windows Azure Web Sites	Cloud computing	2013
Windows Command-Line Administration Instant Reference	Operating systems (Computers); Command languages (Computer science); Microsoft Windows (Computer file)	2010
Windows Phone 7 Programming for Android and iOS Developers	Android (Electronic resource); Windows phone (Computer file)	2011

Title	Subject(s)	Year
Windows Phone 7 Secrets: Do What You Never Thought Possible with Windows Phone 7	Smartphones -- Programming; Mobile computing; Windows phone (Computer file)	2011
Windows Phone 7 Silverlight Cookbook: All the Recipes You Need to Start Creating Apps and Making Money	Smartphones -- Programming; Operating systems (Computers); Mobile computing; Windows phone (Computer file)	2011
Windows Phone 7.5 Application Development with F#: Develop Amazing Applications for Windows Phone Using F#	Operating systems (Computers); Windows phone (Computer file)	2013
Windows Phone 7.5: Building Location-Aware Applications: Build Your First Windows Phone Application with Location and Maps	Mobile computing; Operating systems (Computers); Smartphones -- Programming; Windows phone (Computer file)	2012
Windows Phone 8 Application Development Essentials: A Practical Guide to Creating a Windows Phone 8 Applications Using C#, XAML, and MVVM	Windows phone (Computer file)	2013
Windows Server 2008 R2 Administration Instant Reference	Operating systems (Computers)	2010
Windows Server 2008 R2 Hyper-V: Insiders Guide to Microsoft's Hypervisor	Virtual computer systems	2010
Windows Server 2008 R2 Secrets	Operating systems (Computers)	2011
Windows Server 2012 Hyper-V Installation and Configuration Guide	Virtual computer systems	2013
Wireless Mobility: The Why of Wireless	Mobile computing; TCP/IP (Computer network protocol)	2010
Wireless Network Administration: A Beginner's Guide	Wireless LANs	2010
Wireless Network Traffic and Quality of Service Support: Trends and Standards	Wireless LANs	2010
Wireless Sensor Networks for Healthcare Applications	Wireless sensor networks	2010
WiX: A Developer's Guide to Windows Installer XML: Create a Hassle-Free Installer for Your Windows Software Using WiX	Microsoft Windows (Computer file)	2010
WordPress 3 Ultimate Security: Protect Your WordPress Site and Its Network	Computer networks -- Security measures; Data protection	2011

Title	Subject(s)	Year
WordPress Mobile Applications with PhoneGap: A Straightforward, Example-Based Guide to Leveraging Your Web Development Skills to Build Mobile Applications Using WordPress, jQuery, jQuery Mobile, and PhoneGap	Mobile computing	2012
Wordpress Mobile Web Development Beginner's Guide	Mobile computing	2012
WS-BPEL 2.0 for SOA Composite Applications with IBM WebSphere 7: Define, Model, Implement, and Monitor Real-World BPEL 2.0 Business Processes with SOA-Powered BPM	Service oriented architecture (Computer science)	2010
WS-BPEL 2.0 for SOA Composite Applications with Oracle SOA Suite 11g: Define, Model, Implement, and Monitor Real-World BPEL Business Processes with SOA-Powered BPM	Service oriented architecture (Computer science)	2010
Xamarin Mobile Application Development for iOS	iOS (Electronic resource)	2013
Xcode 4	Operating systems (Computers); Mac OS	2011
Xcode 4 Cookbook: Over 100 Recipes to Build Your Own Fun and Exciting iOS Applications	Operating systems (Computers)	2013
Xcode 4 iOS Development: Beginner's Guide: Use the Powerful Xcode 4 Suite of Tools to Build Applications for the iPhone and iPad from Scratch	iPhone (Smartphone) -- Programming; Mac OS	2011
XDA Developers' Android Hacker's Toolkit: The Complete Guide to Rooting, ROMs and Theming	Android (Electronic resource); Smartphones -- Programming	2012
Zenoss Core 3.x Network and System Monitoring: A Step-by-Step Guide to Configuring, Using, and Adapting This Free Open Source Network Monitoring System	Computer networks	2011
Zip! Tips	Information technology -- Management	2013

Appendix C: Titles Added To Support Program, 2013-2015

Title	Subject(s)	Year	Format
3D Math Primer for Graphics and Game Development	Computer science -- Mathematics	2012	eBook
Advances in Network Architecture	Computer network architectures	2012	eBook
Android Apps with App Inventor	Android (Electronic resource); Smartphones; Mobile computing	2012	Book
Architecture of Network Systems	Computer network architectures	2011	eBook
Beginning Objective-C	Objective C (Computer program language)	2012	eBook
Biometrics in the New World: The Cloud, Mobile Technology and Pervasive Identity	Biometric identification	2014	Book
C++ Primer	C++ (Computer program language)	2012	Book
CCNA: Routing and Switching: Study Guide	Computer networks; Electronic data processing personnel	2013	Book
Cloud Management and Security	Cloud computing; Computer security	2014	Book
Complete CompTIA A+ Guide to PCs	Computer networks	2013	Book
CompTIA Network+ Exam Guide: Exam N10-005	Computer networks; Electronic data processing personnel	2012	Book
Computer Networks and Internets	Computer networks; Internetworking (Telecommunication)	2015	Book
Computer Science: The Hardware, Software and Heart of It	Computer input-output equipment	2011	Book
A Concise Introduction to Data Compression	Data compression (Computer science)	2008	Book
Connecting Networks Companion Guide	Computer networks	2014	Book
The Cuckoo's Egg: Tracking a Spy Through the Maze of Computer Espionage	Computer crimes	1989	eBook
Cyber Warfare: How Conflicts in Cyberspace are Challenging America and Changing the World	Computer security	2013	Book
A Down-to-Earth Guide to SDLC Project Management	Project management	2013	Book
Elements of Computer Networking: An Integrated Approach	Computer networks	2014	Book
Enterprise Architecture A to Z: Frameworks, Business Process Modeling, SOA, and Infrastructure Technology	Information technology -- Management; Computer network architectures; Information resources management	2008	eBook
Essentials of Online Payment Security and Fraud Prevention	Electronic commerce -- Security measures	2010	eBook

Title	Subject(s)	Year	Format
The Garbage Collection Handbook: The Art of Automatic Memory Management	Memory management (Computer science)	2012	Book
Green Computing: Tools and Techniques for Saving Energy, Money, and Resources	Cloud computing; Tablet computers	2014	Book
Hacking and Securing iOS Applications	Computer security; Objective C (Computer program language); iOS (Electronic resource)	2013	eBook
Guide to OSI and TCP/IP Models	Computer networks; OSI (Computer network standard); TCP/IP (Computer network protocol)	2014	Book
The Handbook of Personal Area Networking Technologies and Protocols	Computer network protocols; Personal area networks (Computer networks)	2013	Book
Hardware/Firmware Interface Design: Best Practices for Improving Embedded Systems Development	Computer interfaces	2010	Book
Information Security Fundamentals	Computer security; Data protection	2014	Book
Information Technology Project Management Interview Questions	Information technology -- Management; Project management	2009	Book
Introduction to Computer Networks and Cybersecurity	Computer networks -- Security measures	2013	Book
Introduction to Data Compression	Data compression (Computer science)	2012	Book
Information to Information Security: A Strategic-Based Approach	Computer networks -- Security measures; Computer security	2014	Book
IT Career JumpStart: An Introduction to PC Hardware, Software, and Networking	Computer input-output equipment; Computer networks	2011	eBook
IT Project Management: On Track from Start to Finish	Information technology -- Management; Information technology projects; Project management	2010	Book
Kingpin: How One Hacker Took Over the Billion-Dollar Cybercrime Underground	Computer crimes	2011	eBook
Managing Systems and IT Projects	Project management	2011	Book
Managing Technology Based Projects: Tools, Techniques, People, and Business Processes	Information technology -- Management; Information technology projects	2014	eBook
Managing the Unmanageable: Rules, Tools, and Insights for Managing Software People and Teams	Electronic data processing personnel; Information technology projects	2013	Book
Mathematics and Physics for Programmers	Computer science -- Mathematics	2012	eBook
Modern Computer Algebra	Computer science -- Mathematics	2013	eBook

Title	Subject(s)	Year	Format
Modern Operating Systems	Operating systems (Computers)	2014	Book
Networking for Dummies	Computer networks	2013	eBook
The Object-Oriented Thought Process	Object-oriented programming (Computer science)	2013	Book
Objective-C and iOS Programming: A Simplified Approach	Objective C (Computer program language); iPad (Computer) -- Programming; iPhone (Smartphone) -- Programming	2014	Book
Objective-C Programming: The Big Nerd Ranch Guide	Objective C (Computer program language)	2013	Book
Objective-C Programming for Dummies	Objective C (Computer program language)	2012	eBook
Objective-C Recipes: A Problem-Solution Approach	Object oriented programming (Computer science); Objective C (Computer program language); iOS (Electronic resource)	2012	Book
The OSI Model: Simply Explained	OSI (Computer network standard)	2013	Book
Peopleware: Productive Projects and Teams	Project management	2013	Book
Perspectives and Techniques for Improving Information Technology Project Management	Information technology -- Management; Information technology projects; Project management	2013	eBook
Pro-Objective C	Object oriented programming (Computer science); Objective C (Computer program language)	2013	Book
Programming in Objective-C	Object oriented programming (Computer science); Objective C (Computer program language)	2013	Book
Project Management for Engineering and Technology	Project management	2015	Book
Responsive Security: Be Ready to Be Secure	Information technology -- Security measures; Data protection	2014	Book
Security Basics for Computer Architects	Computer architecture; Computer security	2013	Book
Service Oriented Architecture: 68 Most Asked Questions: What You Need to Know	Service oriented architecture (Computer science)	2013	eBook
Sets, Logic and Maths for Computing	Computer science -- Mathematics	2012	Book
Smashing UX Design	Electronic commerce	2012	eBook
SOA Made Simple	Service oriented architecture (Computer science); Cloud computing	2012	eBook

Title	Subject(s)	Year	Format
To the Cloud: Big Data in a Turbulent World	Cloud computing	2014	Book

Appendix D: Titles to Be Added During the 2015-2016 Fiscal Year

Title	Subject(s)	Year	Format
Cisco: A Beginner's Guide	Computer networks; Internetworking (Telecommunication); TCP/IP (Computer network protocol); Local area networks (Computer networks)	2013	Book
CompTIA Network+ All-In-One Exam Guide, Sixth Edition (Exam N10-006)	Computer networks	2015	Book
Computer Networks: A Systems Approach	Computer networks	2011	Book
Designing Mobile Payment Experiences: Principles and Best Practices for Mobile Commerce	Mobile commerce	2014	eBook
Designing the Requirements: Building Applications that the User Wants and Needs	User interfaces (Computer systems)	2015	Book
Effective Software Risk Analytics: From Requirements to Deployment	System analysis	2015	Book
Effortless E-commerce with PHP and MySQL	Electronic commerce	2014	Book
Essential Cybersecurity Science: Build, Test, and Evaluate Secure Systems	Computer security	2015	Book
Guide to Firewalls	Firewalls (Computer security)	2015	Book
Introduction to Hardware Security and Trust	Computer security; Computer input-output equipment	2011	Book
IT Manager's Handbook: Getting Your New Job Done	Information technology -- Management	2012	eBook
Java EE 7: The Big Picture	Java (Computer program language); Object-oriented programming (Computer science)	2014	Book
Learn BlackBerry 10 App Development: A Cascades-Driven Approach	BlackBerry (Smartphone)	2014	Book
Mike Meyers' CompTIA Network+ Guide to Managing and Troubleshooting Networks, Fourth Edition (Exam N10-006)	Computer networks	2015	Book
The Mobile Application Hacker's Handbook	iPhone (Smartphone); Android (Electronic resource); Windows phone (Computer file); BlackBerry (Smartphone); Smartphones	2015	Book
Mobile Electronic Commerce: Foundations, Development, and Applications	Mobile commerce; Electronic commerce	2015	eBook

Title	Subject(s)	Year	Format
Network Security Assessment: Know Your Network	Computer security; Computer networks	2015	Book
Networking: A Beginner's Guide, Sixth Edition	Computer networks	2013	Book
Next Generation Wireless LANs: Throughput, Robustness, and Reliability In 802. 11n, 802. 11ac	Wireless LANs	2013	eBook
Principles of Wireless Sensor Networks	Wireless sensor networks	2015	Book
Projects in Computing and Information Systems: A Student's Guide (3rd Edition)	Project management	2015	Book
Sams Teach Yourself SQL in 10 Minutes	Database management	2012	Book
Securing SQL Server, Third Edition: Protecting Your Database from Attackers	SQL server; Computer security	2015	Book
Service Desk and Incident Manager: Careers in IT Service Management	Information technology -- Management; Data processing service centers	2014	Book
A Software Engineer Learns Java and Object Orientated Programming	Java (Computer program language); Object-oriented programming (Computer science)	2015	Book
Structured Computer Organization	Computer organization	2012	Book
Web Application Firewalls: A Practical Approach	Firewalls (Computer security)	2015	Book

FLORIDA JOBS

by Occupation

Workforce Region 9 - Alachua and Bradford Counties

Occupation Code	Title	Employment 2014	Employment 2022	2014 - 2022 Level Change	2014 - 2022 Percent Change	2014 - 2022 Total Job Openings*	2014 Average Hourly Wage ($)**	Education Level
000000	***Total, All Occupations***	145,668	160,991	15,323	10.5	42,620	NA	NA
110000	**Management Occupations**	4,983	5,331	348	7.0	1,154	NA	NA
111000	*Top Executives*	1,135	1,200	65	5.7	239	NA	NA
111011	Chief Executives	170	179	9	5.3	44	80.56	Bachelor's Degree
111021	General and Operations Managers	935	989	54	5.8	188	51.33	Associate Degree
111031	Legislators	30	32	2	6.7	7	20.07	Bachelor's Degree
112000	*Marketing, Public Relations & Sales Managers*	288	313	25	8.7	91	NA	NA
112011	Advertising and Promotions Managers	52	54	2	3.9	14	65.39	Bachelor's Degree
112021	Marketing Managers	75	83	8	10.7	25	55.10	Bachelor's Degree
112022	Sales Managers	149	163	14	9.4	48	61.69	Bachelor's Degree
112031	Public Relations Managers	12	13	1	8.3	4	54.93	Bachelor's Degree
113000	*Operations Specialties Managers*	634	701	67	10.6	169	NA	NA
113011	Administrative Services Managers	157	177	20	12.7	49	42.70	Associate Degree
113021	Computer and Information Systems Managers	84	95	11	13.1	21	58.17	Bachelor's Degree
113031	Financial Managers	221	240	19	8.6	50	62.67	Bachelor's Degree
113051	Industrial Production Managers	65	74	9	13.9	21	58.42	Associate Degree
113071	Transportation, Storage, and Distribution Managers	44	47	3	6.8	11	40.39	Associate Degree
113121	Human Resources Managers	36	38	2	5.6	9	55.80	Bachelor's Degree
113131	Training and Development Managers	12	14	2	16.7	4	29.88	Associate Degree
119000	*Other Management Occupations*	2,926	3,117	191	6.5	655	NA	NA
119021	Construction Managers	522	605	83	15.9	108	33.82	Associate Degree
119032	Education Administrators, Elementary and Secondary	109	119	10	9.2	34	36.77	Bachelor's Degree
119033	Education Administrators, Postsecondary	53	56	3	5.7	15	69.63	Bachelor's Degree
119039	Education Administrators, All Other	50	53	3	6.0	14	51.22	Bachelor's Degree
119041	Engineering Managers	84	101	17	20.2	30	51.02	Bachelor's Degree
119051	Food Service Managers	166	183	17	10.2	41	29.42	Associate Degree
119111	Medical and Health Services Managers	222	241	19	8.6	61	51.34	Bachelor's Degree
119121	Natural Sciences Managers	83	89	6	7.2	40	56.92	Bachelor's Degree
119131	Postmasters and Mail Superintendents	13	10	-3	-23.1	2	34.28	Associate Degree
119141	Property, Real Estate & Community Association Managers	580	599	19	3.3	116	25.76	Associate Degree
119151	Social and Community Service Managers	90	100	10	11.1	25	42.11	Associate Degree
119199	Managers, All Other	207	215	8	3.9	45	44.64	Associate Degree
130000	**Business and Financial Operations Occupations**	8,558	9,503	945	11.0	2,338	NA	NA

Source: Florida Department of Economic Opportunity, Bureau of Labor Market Statistics - October 2014

FLORIDA JOBS

by Occupation

Workforce Region 9 - Alachua and Bradford Counties

Occupation Code	Title	Employment 2014	Employment 2022	2014 - 2022 Level Change	2014 - 2022 Percent Change	2014 - 2022 Total Job Openings*	2014 Average Hourly Wage ($)**	Education Level
131000	*Business Operations Specialists*	5,873	6,541	668	11.4	1,576	NA	NA
131011	Agents and Business Managers of Artists & Entertainers	34	37	3	8.8	8	25.87	Bachelor's Degree
131022	Wholesale and Retail Buyers, Except Farm Products	18	20	2	11.1	6	25.42	Associate Degree
131023	Purchasing Agents, Except Farm Products & Trade	183	193	10	5.5	49	25.37	Associate Degree
131041	Compliance Officers, Exc. Safety, Agri, Constr & Transp.	193	232	39	20.2	56	25.24	Postsecondary Vocational
131051	Cost Estimators	195	260	65	33.3	94	24.76	Associate Degree
131071	Human Resources Specialists	410	447	37	9.0	91	24.92	Bachelor's Degree
131075	Labor Relations Specialists	50	51	1	2.0	8	15.01	Bachelor's Degree
131081	Logisticians	29	32	3	10.3	7	27.67	Bachelor's Degree
131111	Management Analysts	577	646	69	12.0	142	41.42	Bachelor's Degree
131121	Meeting and Convention Planners	61	70	9	14.8	18	23.43	Associate Degree
131131	Fundraisers	35	42	7	20.0	14	24.22	High School Diploma
131141	Compensation, Benefits, and Job Analysis Specialists	46	57	11	23.9	17	26.24	Associate Degree
131151	Training and Development Specialists	244	305	61	25.0	93	22.40	Bachelor's Degree
131161	Market Research Analysts and Marketing Specialists	420	539	119	28.3	208	28.32	Bachelor's Degree
131199	Business Operations Specialists, All Other	2,863	3,050	187	6.5	615	28.99	Associate Degree
132000	*Financial Specialists*	2,685	2,962	277	10.3	762	NA	NA
132011	Accountants and Auditors	1,375	1,524	149	10.8	381	28.56	Bachelor's Degree
132031	Budget Analysts	210	235	25	11.9	60	26.33	Bachelor's Degree
132051	Financial Analysts	44	50	6	13.6	13	43.68	Bachelor's Degree
132053	Insurance Underwriters	283	321	38	13.4	111	30.18	Postsecondary Vocational
132061	Financial Examiners	14	15	1	7.1	3	NA	Bachelor's Degree
132071	Loan Counselors	59	68	9	15.3	21	20.84	Associate Degree
132072	Loan Officers	195	212	17	8.7	57	44.07	Associate Degree
132081	Tax Examiners, Collectors, and Revenue Agents	83	87	4	4.8	20	19.31	Bachelor's Degree
132082	Tax Preparers	138	152	14	10.1	38	13.05	Postsecondary Vocational
132099	Financial Specialists, All Other	87	88	1	1.2	15	29.92	Postsecondary Vocational
150000	**Computer and Mathematical Occupations**	3,477	3,892	415	11.9	908	NA	NA
151000	*Computer Specialists*	3,277	3,672	395	12.1	823	NA	NA
151121	Computer Systems Analysts	407	453	46	11.3	106	38.55	Associate Degree
151131	Computer Programmers	216	230	14	6.5	54	28.24	Postsecondary Vocational
151132	Software Developers, Applications	607	696	89	14.7	137	28.05	Associate Degree
151133	Software Developers, Systems Software	78	107	29	37.2	35	46.58	Bachelor's Degree

Source: Florida Department of Economic Opportunity, Bureau of Labor Market Statistics - October 2014

FLORIDA JOBS

by Occupation

Workforce Region 9 - Alachua and Bradford Counties

Occupation Code	Title	Employment 2014	Employment 2022	2014 - 2022 Level Change	2014 - 2022 Percent Change	2014 - 2022 Total Job Openings*	2014 Average Hourly Wage ($)**	Education Level
151134	Web Developers	70	77	7	10.0	15	30.49	Postsecondary Vocational
151141	Database Administrators	82	101	19	23.2	30	32.18	Associate Degree
151142	Network and Computer Systems Architects and Admins.	147	175	28	19.1	47	32.69	Associate Degree
151143	Computer Network Architects	1,054	1,149	95	9.0	215	28.09	Postsecondary Vocational
151151	Computer User Support Specialists	403	449	46	11.4	129	20.30	Postsecondary Vocational
151152	Computer Network Support Specialists	81	90	9	11.1	26	18.86	Postsecondary Vocational
151199	Computer Occupations, All Other	112	124	12	10.7	25	27.62	Postsecondary Vocational
152000	*Mathematical Scientists*	200	220	20	10.0	85	NA	NA
152031	Operations Research Analysts	106	120	14	13.2	40	26.99	Master's or Higher Degree
152041	Statisticians	91	96	5	5.5	43	28.79	Bachelor's Degree
170000	**Architecture and Engineering Occupations**	1,674	1,879	205	12.3	491	NA	NA
171000	*Architects, Surveyors, and Cartographers*	143	171	28	19.6	51	NA	NA
171011	Architects, Except Landscape and Naval	87	105	18	20.7	32	35.27	Master's or Higher Degree
171022	Surveyors	26	31	5	19.2	9	25.14	Bachelor's Degree
172000	*Engineers*	988	1,119	131	13.3	309	NA	NA
172021	Agricultural Engineers	34	36	2	5.9	8	30.96	Bachelor's Degree
172031	Biomedical Engineers	59	89	30	50.9	40	36.37	Bachelor's Degree
172041	Chemical Engineers	24	25	1	4.2	7	26.22	Bachelor's Degree
172051	Civil Engineers	240	271	31	12.9	69	32.56	Bachelor's Degree
172071	Electrical Engineers	58	70	12	20.7	23	37.08	Bachelor's Degree
172072	Electronics Engineers, Except Computer	59	66	7	11.9	18	30.47	Bachelor's Degree
172081	Environmental Engineers	76	81	5	6.6	18	27.83	Bachelor's Degree
172111	Health and Safety Engineers, Except Mining	27	34	7	25.9	12	27.12	Bachelor's Degree
172112	Industrial Engineers	201	213	12	6.0	47	34.66	Bachelor's Degree
172141	Mechanical Engineers	70	80	10	14.3	28	44.68	Bachelor's Degree
172199	Engineers, All Other	98	106	8	8.2	25	35.60	Bachelor's Degree
173000	*Drafters, Engineering, and Mapping Technicians*	543	589	46	8.5	131	NA	NA
173011	Architectural and Civil Drafters	68	66	-2	-2.9	10	23.59	Postsecondary Vocational
173013	Mechanical Drafters	21	25	4	19.1	7	26.14	Postsecondary Vocational
173019	Drafters, All Other	21	22	1	4.8	4	18.49	Postsecondary Vocational
173022	Civil Engineering Technicians	28	32	4	14.3	8	23.25	Associate Degree
173023	Electrical and Electronic Engineering Technicians	68	73	5	7.4	15	21.82	Associate Degree
173025	Environmental Engineering Technicians	32	37	5	15.6	10	13.64	Associate Degree

Source: Florida Department of Economic Opportunity, Bureau of Labor Market Statistics - October 2014

Top 15 Bachelor Level Occupations in Undersupply Using Long-Term Demand Data (June 2014)

Occupation	FCS-C	CIE-C	ICUF-C	SUS-C	Total Supply	Long Term Demand	Supply Gap or Overage	Ratio of Supply to Demand	CURR YR EMP	ANNUAL OPENINGS	ENTRY WAGE	MEDIAN WAGE	EXP WAGE
Accountants and Auditors		362	909	2,758	4,029	3,297	732	1.22	84,311	3,297	$20.01	$29.05	$38.41
Elementary School Teachers, Except Special Education	288	80	650	2,171	3,189	3,041	148	1.05	68,785	3,041	$22.73	$28.08	$34.05
General and Operations Managers**	2,577	707	1,947	2,500	7,731	2,015	5,716	3.84	78,560	2,015	$27.64	$46.66	$68.09
Management Analysts**	88	3,360	5,114	6,001	14,563	1,899	12,664	7.67	48,191	1,899	$19.79	$31.64	$46.01
Secondary School Teachers, Except Special and Career/Technical Education	128	17	2,541	8,653	11,339	1,576	9,763	7.19	39,737	1,576	$23.96	$29.15	$35.46
Middle School Teachers, Except Special and Career/Technical Education	89		181	807	1,077	1,299	-222	0.83	29,406	1,299	$23.47	$28.31	$33.77
Construction Managers***	188	65	80		333	1,103	-770	0.30	42,512	1,103	$25.79	$39.09	$53.07
Market Research Analysts and Marketing Specialists			395	2,059	2,454	979	1,475	2.51	14,836	979	$17.04	$26.35	$33.97
Human Resources Specialists	27	5	278		310	955	-645	0.32	24,161	955	$16.19	$23.61	$31.07
Teachers and Instructors, All Other			5		5	952	-947	0.01	28,206	952	N/R	N/R	N/R
Computer Systems Analysts	587	56	370	1,652	2,665	880	1,785	3.03	22,564	880	$28.69	$41.08	$50.09
Software Developers, Applications	222	813	195	816	2,046	811	1,235	2.52	23,036	811	$24.56	$38.28	$46.25
Graphic Designers	1,052	921	136	78	2,187	700	1,487	3.12	16,217	700	$13.70	$19.51	$24.92
Computer Programmers	442	81	80	392	995	668	327	1.49	19,000	668	$21.68	$34.45	$43.71
Cost Estimators	3		5	267	275	663	-388	0.41	11,197	663	$17.66	$26.01	$33.60

**Requires 1 to 5 years of experience; ***Requires more than 5 years of experience
Offered at the Bachelor degree level Note: All data are statewide based, FCS, CIE and SUS data are based on 2012-2013 school year graduates, ICUF data are based on 2011-12 graduates.
BLS education levels used for all occupations.

Bachelor's Degree Level Occupations Gaining the Most New Jobs

Florida Statewide 2014-2022

Rank	Occupation Title	Employment 2014	Employment 2022	2014-22 Change Level	2014-22 Change Percent	2014 Annual Average Wage
1	Registered Nurses	167,360	199,927	32,567	19.46	$63,192
2	Elementary School Teachers, Except Special Education	68,773	81,595	12,822	18.64	$48,284
3	Accountants and Auditors	82,429	93,943	11,514	13.97	$68,806
4	Management Analysts**	51,719	60,342	8,623	16.67	$81,416
5	Construction Managers	41,996	49,714	7,718	18.38	$89,190
6	Middle School Teachers, Exc. Special & Voc. Education	31,005	36,798	5,793	18.68	$48,598
7	Market Research Analysts and Marketing Specialists	17,274	22,630	5,356	31.01	$57,913
8	Software Developers, Applications	24,599	29,340	4,741	19.27	$82,123
9	Cost Estimators	12,251	16,736	4,485	36.61	$58,970
10	Human Resources Specialists	25,438	29,908	4,470	17.57	$54,812
11	Secondary School Teachers, Exc. Special and Voc. Ed.	41,052	45,368	4,316	10.51	$50,143
12	General and Operations Managers**	77,098	81,017	3,919	5.08	$119,698
13	Substitute Teachers	30,512	34,298	3,786	12.41	$22,812
14	Loan Officers	19,814	23,374	3,560	17.97	$75,830
15	Personal Financial Advisors	15,054	18,447	3,393	22.54	$94,247
16	Computer Systems Analysts	22,380	25,720	3,340	14.92	$87,181
17	Computer Network Architects***	19,490	22,604	3,114	15.98	$70,321
18	Network and Computer Systems Architects and Admins.	15,087	18,088	3,001	19.89	$80,316
19	Training and Development Specialists**	12,960	15,730	2,770	21.37	$56,021
20	Software Developers, Systems Software	11,398	13,854	2,456	21.55	$92,252
21	Civil Engineers	13,863	16,258	2,395	17.28	$84,890
22	Sales Representatives, Wholesale & Mfg, Tech. & Sci. Prod.	22,334	24,602	2,268	10.15	$77,920
23	Kindergarten Teachers, Except Special Education	11,174	13,298	2,124	19.01	$46,862
24	Medical and Health Services Managers	10,948	12,890	1,942	17.74	$108,428
25	Coaches and Scouts	8,686	10,597	1,911	22.00	$49,465
26	Securities and Financial Services Sales Agents	20,410	22,254	1,844	9.03	$86,420
27	Public Relations Specialists	11,325	13,138	1,813	16.01	$60,076
28	Directors, Religious Activities and Education**	12,129	13,899	1,770	14.59	$36,362
29	Financial Analysts	10,180	11,903	1,723	16.93	$75,387
30	Graphic Designers	16,804	18,523	1,719	10.23	$44,868
31	Special Education Teachers, Kindergarten and Elementary	7,892	9,587	1,695	21.48	$49,831
32	Compliance Officers, Exc. Safety, Agri, Constr & Transp.	13,742	15,366	1,624	11.82	$60,154
33	Clergy	9,963	11,469	1,506	15.12	$44,767
34	Sales Managers**	14,908	16,396	1,488	9.98	$131,035
35	Financial Managers***	18,206	19,685	1,479	8.12	$130,248
36	Database Administrators**	6,542	8,012	1,470	22.47	$78,832
37	Vocational Education Teachers, Postsecondary**	7,668	9,069	1,401	18.27	$54,702
38	Computer Programmers	17,509	18,843	1,334	7.62	$76,958
39	Child, Family, and School Social Workers	9,022	10,319	1,297	14.38	$41,587
40	Logisticians	4,613	5,854	1,241	26.90	$69,810

Bachelor's Degree Level Occupations Gaining the Most New Jobs

Florida Statewide 2014-2022

Rank	Occupation Title	Employment 2014	Employment 2022	2014-22 Change Level	2014-22 Change Percent	2014 Annual Average Wage
41	Computer and Information Systems Managers***	9,792	11,016	1,224	12.50	$133,933
42	Administrative Services Managers**	9,681	10,889	1,208	12.48	$103,219
43	Engineering Managers***	7,389	8,593	1,204	16.29	$120,229
44	Architects, Except Landscape and Naval	5,049	6,095	1,046	20.72	$78,429
45	Chief Executives***	16,544	17,499	955	5.77	$200,148
46	Electrical Engineers	6,983	7,905	922	13.20	$85,828
47	Medical and Clinical Laboratory Technologists	10,040	10,950	910	9.06	$57,773
48	Marketing Managers***	6,037	6,910	873	14.46	$121,206
49	Health Educators	3,286	4,141	855	26.02	$44,412
50	Industrial Engineers	10,018	10,855	837	8.35	$72,546

Source: Florida Department of Economic Opportunity, Bureau of Labor Market Statistics, Employment Projections Program, Forecast to 2022. Released September 2014.
BLS education levels used for all occupations. **Requires experience of less than 5 years, ***Requires experience of 5 years or more.

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New Search

Your search criteria

Two Digit CIP Code:	11: COMPUTR/INFO SCI/SUPPORT SRVCS		
Six Digit CIP Code:	11.0101: Computer and Information Sciences, General		
Degree Level:	Bach	**Race:**	ALL
Major:	ALL	**Gender:**	ALL
University:	ALL	**Residency:**	ALL

Your Results

Show rows for: University | Degree | Race | Gender | Residency | Broad Program Area (CIP 2)

	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14
FAMU	67	53	39	34	26	16	27	17	25	32
FAU	114	71	54	56	47	45	61	66	88	92
FGCU	7	3	10	6	9	9	5	11	12	11
FIU	91	103	66	70	63	53	63	62	58	60
FPU										
FSU	71	62	56	42	38	37	45	49	79	76
NCF										
UCF	103	102	89	79	75	74	91	112	106	157
UF	97	70	46	28	32	11	20	8	9	70
UNF	94	61	54	48	51	59	68	57	73	74
USF	39	51	40	46	40	49	62	53	81	87
UWF	53	49	45	31	38	36	39	42	34	46

Total	**736**	**625**	**499**	**440**	**419**	**389**	**481**	**477**	**565**	**705**

Download these results as a csv file.







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STATE UNIVERSITY SYSTEM of FLORIDA
Board of Governors

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Your search criteria

Two Digit CIP Code:	11: COMPUTR/INFO SCI/SUPPORT SRVCS		
Six Digit CIP Code:	11.0103: Information Technology		
Degree Level:	Bach	**Race:**	ALL
Major:	ALL	**Gender:**	ALL
University:	ALL	**Residency:**	ALL

Your Results

Show rows for: University | Degree | Race | Gender | Residency | Broad Program Area (CIP 2)

	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14
FAMU								1	3	12
FAU										
FGCU										
FIU	19	48	51	71	57	72	94	134	130	139
FPU										
FSU		63	110	103	114	112	104	108	134	156
NCF										
UCF	95	106	75	70	68	52	61	92	107	124
UF										
UNF										
USF	12	13	13	18	24	28	39	69	81	94
UWF	53	51	33	39	39	39	36	51	45	40
Total	**179**	**281**	**282**	**301**	**302**	**303**	**334**	**455**	**500**	**565**

STATE UNIVERSITY SYSTEM of FLORIDA
Board of Governors

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New Search

Your search criteria

Two Digit CIP Code:	14: ENGINEERING		
Six Digit CIP Code:	14.0901: Computer Engineering, General		
Degree Level:	Bach	**Race:**	ALL
Major:	ALL	**Gender:**	ALL
University:	ALL	**Residency:**	ALL

Your Results

Show rows for: University | Degree | Race | Gender | Residency | Broad Program Area (CIP 2)

	04-05	05-06	06-07	07-08	08-09	09-10	10-11	11-12	12-13	13-14
FAMU	9	15	9	7	10		2	3	2	3
FAU	34	31	34	27	21	27	15	21	31	46
FGCU										
FIU	46	39	51	57	43	36	45	50	36	70
FPU										
FSU	3	9	18	7	14	16	9	13	14	21
NCF										
UCF	85	72	69	63	42	47	45	57	75	82
UF	179	154	123	91	96	94	85	124	101	67
UNF										
USF	39	42	41	36	21	29	28	39	49	48
UWF					3	4	10	3	8	15
Total	**395**	**362**	**345**	**288**	**250**	**253**	**239**	**310**	**316**	**352**