Academic Audit Self-Study Report

of the

Associate of Applied Science Degree Professional Studies:
Information Technology (AAS-PS IT)

The Regents Online Degree Program

Tennessee Board of Regents

February 15, 2014

Submitted by:

George V. Meghabghab, IT Audit Team (chair)

On behalf of:

<table>
<thead>
<tr>
<th>Chattanooga State Community College</th>
<th>Cleveland State Community College</th>
<th>Columbia State Community College</th>
<th>Dyersburg State Community College</th>
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<tr>
<td>Jackson State Community College</td>
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<td>Roane State Community College</td>
<td>Southwest Tennessee Community College</td>
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<td>Walters State Community College</td>
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Academic Audit Self-Study Report of the RODP AAS-Professional Studies: Information Technology Program The Regents Online Degree Program (RODP)

Introduction

The Associate of Applied Science Degree Professional Studies: Information Technology (AAS-PS IT) is an associate’s degree program offered through the Tennessee Board of Regent’s Regents Online Degree Program (RODP). Students participating in the AAS-PS program enroll through one of the system’s 13 community colleges. The purpose of the AAS-PS IT program is two-fold: (1) to provide students with essential skills for a career in information technology and (2) to prepare students for entry into a four-year bachelors program in information technology. The AAS-PS IT is a fully online degree program delivered in an asynchronous model with an assigned faculty/instructor to sections that are limited to 25 students each. Students coming through the AAS-PS IT program must complete a total of 60 hours of academic work that includes 27 hours of core technical concentration work, 9 hours of technical electives and 24 hours of general education and electives. (Please see Appendix A for a full list of the AAS-PS IT coursework options.)

Academic Audit Process

This audit represents a follow up to the 2008-2009 audit which was the first time that a fully online degree program offered through the Tennessee Board of Regents RODP has gone through the academic audit process. As such, the self-study committee encountered fewer challenges to conduct the audit process for a fully-online program. Because of the rapid growth of online programs through TBR’s RODP collaborative institutional model, in the near future, many additional fully online programs will need to go through this same audit process.

Given the breadth of institutional stakeholders, including the 13 community colleges themselves, the process of developing this audit report was complex. The first step was to identify a self-study team which was representative of the institutional participants. The RODP AAS/BPS IT academic subcommittee was selected to function as the self-study team based on its representation from across the system. Once the list of self-study questions was developed for the needs of an online program, a list of contributing stakeholders was needed to solicit for input. A list of approximately 100 individuals representing the 13 institutions, RODP, and other TBR institutions was identified and categorized into five subgroups: (1) CAOs, (2) the RODP Curriculum Committee, (3) AAS-PS course developers/instructors, (4) librarians, and (5) RODP campus contacts.
The full list of stakeholder questions (see Appendix G) was split into Excel worksheets aligned with each of the five logical stakeholder groups. All stakeholders were sent their respective worksheet of questions via email to complete for return to the report team. Repetitive emails reminders was most effective in generating a sufficient body of input to support the self-study report’s needs.

Student data was collected using an online survey (see Appendix H) which collected both quantitative and qualitative data. Students actively enrolled in AAS-PS IT sections were solicited to participate through their RODP courses.

New in this audit which was never attempted by any other audit before, was a survey for the graduates of the AAS-PS IT program (See Appendix I). An emphasis early on in the process was to collect the names, addresses of all of our graduates, and most importantly their emails. An excel spreadsheet with the names and emails was generated and the graduate data was collected and proved most importantly to prove the effectiveness and the success of our overall performance.

To keep the process moving, weekly conference call meetings were held involving the audit team and representatives of TBR and RODP. The study team was responsible for developing the report itself. Because the study team was distributed across institutions and time zones, electronic document distribution techniques were needed for collaboration.

In addition to the program audit itself, a secondary goal of this effort was to develop new procedures to facilitate the growing need to audit other fully online programs within the RODP collaborative. An independent report will be developed regarding the above process to help in future efforts.

**Overall Performance**

Since the purpose of the AAS degree and specifically the IT courses under consideration is to prepare students for the industry, we started the discussion of our overall performance by asking the following question: "**What makes the RODP AAS IT degree program a success?**" In other words, does the overall content and assessment of the degree program that we offer at RODP: (a) properly prepare our students to perform well at the industry as well as and (b) allow them to successfully continue their studies in a 4-year bachelor’s program? The answers to these questions require knowledge of the performance of the student at the industry in the area for which the RODP degree helped the student get the job. We very quickly realized that there is not just one factor that determines the success for a degree program. Perhaps better to say: We also wanted to explore whether student learning and performance in RODP IT courses were consistent from semester to semester. To follow up on the discussion, here are the factors that we determined impact the success of the above mentioned RODP IT courses:
1) **Demonstration of learning programming language concepts and structures, android mobile programming, networking design, database design and administration, web page design, computer graphics, Operating Systems and Microcomputers, through student performance.** The courses under consideration are: INF 1010, CISP 1610, INF 113, INF 186, CMT 1010, IST 2630, INTC 1050, CST 209, CST 203, CST 218, INF 111, INF 173, CIS 193, CIS 264, WEB 2811, WEB 2812. The faculty determined that it was important to know whether the knowledge and skills a student receives in the listed courses adequately prepared him/her to solve for example a program that required an understanding of a programming concept or implementation of a code in a JAVA-based or other programming language including C++ or C#, design an android mobile app, design a database, implement a network, or design a web page, understand computer graphics, or understand microcomputers and operating systems. Thus we ultimately have to measure the success of our program by how well students learn the material in the above mentioned courses and are able to use those skills in their own disciplines. In addressing the point we are raising in this section, the following questions were addressed:

a) Have the above listed courses given the student the knowledge that they need to understand programming language topics, android mobile topics, database topics, webpage design topics, operating systems topics, computer graphics topics, networking topics that they may encounter in other areas courses in their own disciplines?

b) Have the above listed courses given the student the knowledge that they need to understand programming language topics, android mobile topics, database topics, webpage design topics, computer graphics topics, operating systems topics, networking topics that they may read about while browsing, searching or looking for information on the Web?

c) Looking at the **IT graduate data results (see Appendix D)** shows that our students based on the instruction they received in the above mentioned courses, that they are indeed **100% satisfied** in programming in an object oriented, design a database, implement a network, or design a web page, understand computer graphics, use an operating system, or use any business application including word processing, spreadsheet, or power point presentation. Although the response rate is **low around ~16%**, the rate of satisfaction of our graduates prove that our AAS-Ps IT has been successful in providing them with the knowledge they acquired in all the above listed topics.

d) Have the above listed courses given the student the knowledge that they need to tackle courses at the BS degree level at RODP or another university for which these course are prerequisites? These courses include Algorithms, Analysis of Algorithms, Comparative Programming Languages, designing operating systems, and many others. The above listed courses use an object-oriented programming languages like
JAVA/C++/C#. Will the knowledge acquired by the students also help in their learning of other programming languages like the .NET platform? The above listed courses provide the core foundation for understanding not just object-oriented programming concepts but also the data structures that help implement many applications in the area of networking, webpage design, databases, whether wired and or wireless. Do RODP students who have completed these courses have the required competencies to be able to successfully transfer to the university? That question becomes also of paramount importance to the audit at hand. RODP IT faculty members take our students’ success very seriously as our professional responsibility, and we believe that we are successful in achieving this in all the points covered in this section, although our current evidence is anecdotal rather than supported by data.

2) **Improving student confidence in their IT abilities and knowledge.** The next success factor involves students who have not taken any of the above listed courses before and really show weakness at the beginning of the semester in their programming code assignments and tests for example, database assignments and tests, webpage design assignments and tests, networking assignments and tests, computer graphics assignments and tests, operating systems assignments and tests, but, by the end of the semester, improve their understanding of programming language concepts, database concepts, webpage design concepts, computer graphics, operating systems concepts, android mobile programming, and networking concepts. This gradual improvement helps the student build enough confidence to persist, pass the first 2 courses (CST 209) and CIS (1610) in programming languages for example, and take on the challenge of the next 2 courses (CST 203 and CST218.) This also applies to students who have limited knowledge of programming in general or even an introductory knowledge of JAVA programming because of their high school’s programming courses. Through hard work and discipline these students gain knowledge of programming language concepts, become more confident, and improve their performance. This success factor also includes students who have apprehension about learning programming language in general but are required to take the course for their discipline. Even if these students do not pass the course the first time, they need enough basic understanding and a level of confidence to take the course and succeed on the second attempt.

Looking at the **IT graduate data results (see Appendix D)** shows that our students based on the education they received in their AAS PS IT degree was 40% very helpful and 60% slightly helpful in improving their IT abilities and professional knowledge.

3) **Overall Analysis of students enrolled in the AAS IT degree.** This section looks at the overall analysis of the students who are enrolled in the AAS IT degree. The questions that we are asking in this section are the followings:

a) What was the success rate of the students in the AAS IT degree in the required courses in the first AAS- IT degree audit of 2009?
b) What is the success rate of the students in the AAS IT degree in the required course for this academic audit?

c) What was the drop and withdraw rate of the students in the AAS IT degree in the required courses for the first AAS-IT degree audit program of 2009?

d) What is the drop and withdraw rate of the students in the AAS IT degree in the elective courses?

Looking at next table reveals that the success rate in the required courses for this audit is higher (8% higher) than that in the required courses in 2009. The rate of drop, incomplete, and withdraw (I+W+Drop) is lower in this audit compared to the one in the first audit of 2009 by 5% and the failing rate in this audit is lower by 3% than that our first audit of 2009. Again, we are doing better and our AAS-IT degree is improving steadily.

<table>
<thead>
<tr>
<th>Courses</th>
<th>Success Rate</th>
<th>Failing Rate</th>
<th>I+W+Drop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required Courses(2009)</td>
<td>52.83%</td>
<td>24.46%</td>
<td>22.21%</td>
</tr>
<tr>
<td>Required Courses(2014)</td>
<td>61.3%</td>
<td>21.4%</td>
<td>17.30%</td>
</tr>
<tr>
<td>Overall Improvement</td>
<td>+8.5%</td>
<td>-3%</td>
<td>-5%</td>
</tr>
</tbody>
</table>

4) Fine grained analysis by topic of students enrolled in the AAS IT degree (2009-vs 2014). This section looks at the fine grained/topic analysis of the students who are enrolled in the AAS IT degree. The questions that we are asking in this section are the followings:

a) What is the success rate of the students in the Programming courses of the AAS IT degree program in 2009 as compared to 2014?

b) What is the success rate of the students in the Networking courses of the AAS IT degree program in 2009 as compared to 2014??

c) What is the success rate of the students in the database courses of the AAS IT degree program in 2009 as compared to 2014?

d) What is the success rate of the students in the computer graphics courses of the AAS IT degree program in 2009 as compared to 2014?

e) What is the success rate of the students in the webpage design courses of the AAS IT degree program in 2009 as compared to 2014?

f) What is the success rate of the students in the operating systems courses of the AAS IT degree program in 2009 as compared to 2014?

Looking at next table reveals that the highest success rate is in the Web design (WDes) course(s) at 80% and the lowest success rate is in the Microcomputer and operating systems (App&OS) courses at 46% in 2014. That is a 74% better performance in WDes than in App&OS courses. The lowest failing rate is in database course(s) (Dbase) and stands at 8% and the highest failing rate is in App&OS at 27%. That is a 237.5% better performance in Dbase than in App&OS courses. The highest I+W+Drop rate is in the
App&OS and is around 27.63% and the lowest is 11% in the WDes course(s) at a rate of 11%. That is a much higher by 151%.

<table>
<thead>
<tr>
<th>Courses</th>
<th>Success Rate</th>
<th>Failing Rate</th>
<th>I+W+Drop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pro09</td>
<td>58.06%</td>
<td>20.16%</td>
<td>21.77%</td>
</tr>
<tr>
<td>Pro14</td>
<td>60.00%</td>
<td>20.00%</td>
<td>20.00%</td>
</tr>
<tr>
<td>Net09</td>
<td>68.03%</td>
<td>21.31%</td>
<td>10.66%</td>
</tr>
<tr>
<td>Net14</td>
<td>65%</td>
<td>22%</td>
<td>13%</td>
</tr>
<tr>
<td>Dbase09</td>
<td>65.57%</td>
<td>14.75%</td>
<td>19.67%</td>
</tr>
<tr>
<td>Dbase14</td>
<td>76%</td>
<td>8%</td>
<td>14%</td>
</tr>
<tr>
<td>Graphic09</td>
<td>53.97%</td>
<td>22.22%</td>
<td>23.81%</td>
</tr>
<tr>
<td>Graphic14</td>
<td>56%</td>
<td>24%</td>
<td>20%</td>
</tr>
<tr>
<td>WDes09</td>
<td>54.44%</td>
<td>24.32%</td>
<td>21.24%</td>
</tr>
<tr>
<td>WDes14</td>
<td>80%</td>
<td>9%</td>
<td>11%</td>
</tr>
<tr>
<td>App&amp;OS09</td>
<td>45.79%</td>
<td>26.58%</td>
<td>27.63%</td>
</tr>
<tr>
<td>App&amp;OS14</td>
<td>46%</td>
<td>27%</td>
<td>27%</td>
</tr>
</tbody>
</table>

5) **Improving of reasoning, logical, and analytical skills.** Although students may not have these critical thinking skills before entering our IT courses, we hope that they will have acquired them upon course completion. Since writing programming code for example requires a high level of logical skills, we hope that the idea of sequential thinking and reasoning is being passed on to students as they write their programming codes. Also analytical skills and problem solving skills are needed so that a student first has an understanding of the solution to a given application and can subsequently write a programming code that implements such the solution. In the course CST 203 for
example, we not only teach iterative code writing but also how to solve problems recursively. This requires another way of looking at writing code. All of these constitute what we think are the skills that students acquire as they go through our courses. Looking at the IT graduate data results (see Appendix D) shows that our students based on the education they received in their AAS PS IT degree was 100% helpful in improving their problem solving skills, and 100% helpful in improving their critical/analytical skills.

We started out with the question: “What makes the RODP AAS IT degree program a success?” We identified the dimensions or success factors that impact the answer to that question. Embedded in the question is a major point that can be answered in this audit which could not be answered before: “How well do our graduates perform when they get a job”. Looking at the IT graduate data results (see Appendix D) shows that our students based on the instruction they received that they are indeed 100% satisfied. A critical initiative is to improve the overall I+W+Drop rate by looking at the least successful topic in the IT AAS degree program and improve its success rate. Another potential initiative is to improve the visibility of the IT degree program by organizing an “online programming contest” that will showcase the skills and the visibility of the students in the RODP IT program to employers, the community, and other colleges and universities.

1 – Learning Objectives

The knowledge, skills, and values students should acquire from their educational experience in the RODP AAS in Professional Studies with a concentration in Information Technology have been clearly defined since the program’s inception. This degree was included in the original framework of the Regents On-line Degree initiative from 2000.

1.1 The faculty completed a thorough and candid analysis of their process for developing learning objectives for the program, considering measurability, clarity and what students need to know.

Student learning objectives have been explicitly defined for each course in the program and are listed on the standardized course syllabi and on the RODP website. The Professional Studies in IT program is designed to allow students to master the course and program outcomes.

In 2000 a TBR subcommittee was formed to review the curriculum for all of the RODP degrees. This subcommittee determined the General Education Core Requirements for the program. For the technical core of this degree, the course requirements of similar on-ground programs were reviewed from all TBR community college catalogs.

One can easily see that this program was developed with input from institutional faculty across the state. Individual course learning objectives are developed by the course designers and submitted to the IT Subcommittee for review and approval. Once approved
by the subcommittee the proposal moves on to the Curriculum committee for approval. Along with the committee approvals listed above all courses must go through a quality matters (QM) course review by RODP personnel. The following tables list all of the technical courses, and the school that offers them.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Developed by Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Microcomputer Applications</td>
<td>Motlow State</td>
</tr>
<tr>
<td>2. Programming in C++</td>
<td>Cleveland State</td>
</tr>
<tr>
<td>3. Visual Basic</td>
<td>Volunteer State</td>
</tr>
<tr>
<td>4. Database Programming</td>
<td>Nashville State</td>
</tr>
<tr>
<td>5. Networking and PC Communications</td>
<td>Nashville State</td>
</tr>
<tr>
<td>6. Web Page Development &amp; Design</td>
<td>Columbia State</td>
</tr>
<tr>
<td>7. Computer Graphics</td>
<td>Walters State</td>
</tr>
<tr>
<td>8. Java Programming I &amp; II</td>
<td>Roane State</td>
</tr>
<tr>
<td>9. Data Structures</td>
<td>Roane State</td>
</tr>
<tr>
<td>10. Web Page Applications</td>
<td>Motlow State</td>
</tr>
<tr>
<td>12. Accounting I</td>
<td>Nashville State</td>
</tr>
<tr>
<td>13. E-Commerce</td>
<td>Pellissippi State</td>
</tr>
<tr>
<td>14. Programming In C#</td>
<td>Volunteer State</td>
</tr>
<tr>
<td>15. Introduction to Android Mobile</td>
<td>Volunteer State</td>
</tr>
<tr>
<td>Programming and Logic</td>
<td></td>
</tr>
<tr>
<td>16. Introduction to Linux</td>
<td>Cleveland State</td>
</tr>
<tr>
<td>17. Advanced Web Page/Site Design</td>
<td>Pellissippi State</td>
</tr>
</tbody>
</table>

Table 1: Actual List of the Developed AAS-PS IT (Fall 2013)

1.2 The faculty documented or proposed a process for developing learning objectives that are based on realistic and appropriate evidence.

All of the course designers of the technical courses met, during the development phase of this AAS degree, to review the technical courses in this program to review course competencies and make recommendations for course prerequisites to ensure that not all courses were being taught at the introductory level. At this meeting there were also representatives from the TN Technology Centers, now Tennessee Colleges of Applied Technology (TCAT), so that course designers and TCAT faculty could review their courses to develop an articulation agreement for students to obtain credit where there was overlap between TCAT coursework and introductory RODP courses.

Today new courses and courses that are redesigned have to be submitted for review and approval to the IT Subcommittee and the RODP Curriculum Committee. The purpose of the IT Subcommittee is to ensure program consistency, that the course outcomes are valid and are in line with the program outcomes, and that there is industry need for the course. It becomes critical that the technical courses listed in the table1 above go through the QM review process to ensure quality and consistency of standards across all courses.
1.3 The faculty documented or proposed specific plans to take best practices and appropriate benchmarks into account in the analysis of learning objectives.

Based on student input, there is good evidence to support the basic quality of content within courses based on clarity and consistency with externally published information. For example over 88% report that “…the purpose of each class is clearly presented in the course materials…” and “…it is clear what to expect throughout the program from the information provided by the course description, online program description, syllabi, and instructor feedback.”

The IT Subcommittee has reviewed the course syllabi to review course descriptions, prerequisites, objectives and software used to make recommendations for program changes. Since the beginning of the RODP program the subcommittee for IT has been responsible for reviewing the curriculum of the A.A.S. degree, the BPS – IT degree and the A.A.S. degree in Web Technology and the Web Page Authoring Technical Certificate (added in 2003). Because RODP depends on a group of faculty who have full-time jobs at their respective institutions, the amount of attention that each of these programs receive is impacted. The program student learning objectives (see Table 2 below) were not formalized until the academic year 2005-06. The following outcomes were created by the subcommittee and approved by the full Curriculum Committee:

<table>
<thead>
<tr>
<th>Learning Outcomes</th>
<th>Courses which Provide these Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students will demonstrate the ability to...</td>
<td></td>
</tr>
<tr>
<td>▪ Use an integrated commercial software program to complete business applications in word processing, spreadsheet, presentation graphics, and database management.</td>
<td>INFS 1010 Computer Applications</td>
</tr>
</tbody>
</table>
| ▪ Design a user-interface and forms to access a relational database file using an object-oriented programming language. | INFS 113 Visual Basic  
INFS 186 Database Programming  
INFS 173 Programming in C# |
| ▪ Solve problems by programming in an object-oriented language using standard programming constructs such as data types, assignment statements, use of subprograms, loops, conditional statements, arrays, records, classes and using standard data structures such as lists, stacks, queues, and trees. | CISP 1610 Programming in C++  
INFS 113 Visual Basic  
CST 209 Java Programming I  
CST 203 Data Structures  
CST 218 Java Programming II  
INFS 173 Programming in C# |
| ▪ Discuss network administration issues and recommend basic network troubleshooting solutions. | CMT 1010 Networking/PC Communications |
| ▪ Design and create web pages using web page editing/publishing software and create and edit graphic images and animations for web pages using image editing software. | IST 2630 Web Page Development & Design  
INTC 1050 Computer Graphics  
WEB 2811 Advanced Computer Graphics |


Table 2: AAS-PS IT Learning Outcomes Grid

2 – Curriculum / Co-Curriculum

In considering the curriculum and co-curriculum needs of the AAS-PS IT program, the following items were explored:

1. What processes are used to design or modify the AAS-PS curriculum to assure that the curriculum addresses the program learning objectives?
2. What are the strengths and weaknesses of this program?
3. In what ways could continued curriculum and co-curriculum improvement of the AAS-PS program be fostered?
4. What review processes are in place to keep the curriculum current, relevant, and of optimum quality?

The majority of the stakeholder community agrees that there are processes in place to assure the AAS-PS IT curriculum is closely aligned with the program learning objectives. The RODP academic committee oversees the structure of the curriculum and co-curriculum of all RODP online courses and the discipline-specific Information Technology subcommittee is in place to ensure the validity and rigor of the proposed curriculum. Considering the fluid state of Information Technology, the curriculum and co-curriculum for this specific degree should always be evolving. In order to maintain this standard of high quality, the IT curriculum subcommittee meets several times a year to discuss, update and review the IT program. One new course, INFS 111 Introduction to Android Mobile Programming and Logic, has recently been added (Fall 2013) to the technical electives available to RODP students and existing courses such as INFS 1010 Computer Applications has been updated to include the new version of Microsoft Office 2013.

Several strengths have been identified such as the program teaches current technologies, ease of access in taking online courses and the ability to earn a degree while working.

- The IT program is reviewed on a regular basis by the IT subcommittee and Academic Audit. The IT subcommittee meets to discuss new courses or updates to existing courses or to identify courses that are obsolete.
- All TBR institutions are using the same Course Management System which allows students to take courses through the RODP program or online courses through their home institution without having to learn another Course Management System.
- The Mentor program, RODP help desk, IT subcommittee and the curriculum committee have been identified as useful tools for keeping the program strong.
• Former students are very satisfied and are employed in the IT field using the skills learned in the program according to the Alumni Survey.
• As reported by the graduates of the program thru the Fall 2013 survey, 40% are very satisfied and 60% are satisfied by the education they received.

Weaknesses identified include the need for better communications between all involved. The program needs to have more communication between course developers and other instructors of the courses. Better communication allows the sharing of ideas and the discussion of curriculum. Regular meetings either on-line or on-ground between all course developers and instructors who teach in the program would aid in communications.

Some courses need to have more communication between instructors and students. Incorporating face-to-face instruction using Skype, Adobe Connect or other online conferencing would help to foster an online community for our IT students. The program also needs to incorporate more communications between all course developers within the program to discuss any issues or ideas that may enhance the program. Recommendations for continued fostering of the program include looking at current and future demands of employers and students in the workplace and more communications between all involved. Regarding future demands, the curriculum needs to remain current by adding new courses and removing older courses that are no longer relevant in the workplace.

Suggested subcommittees are in place to make sure the program remains current, relevant and of optimum quality thru the use of quality control reviews and academic audits. Programs, including the courses, are reviewed every five years. Curriculum maps are used to identify student learning outcomes and to safeguard that they are thoroughly addressed. Faculty are also constantly reviewing the software used and making certain the most relevant topics are addressed. Particular suggestions that came out of the surveys were to make the information about the modification process more transparent by posting the process on the RODP website, and to have more coordination of curriculum between all institutions. An annual meeting of IT developers and the instructors would be helpful but it would also require a great deal of planning to ensure that relevant objectives and program weaknesses were addressed.

A number of ideas were submitted to ensure that review processes are in place to keep the curriculum current, relevant, and of optimum quality. For example, a set of skills was pointed out that AAS-PS IT academic subcommittee is looking at to update for 2015 as defined by CompterWorld.com (http://www.ComputerWorld.com and Appendix E) as a basis for ensuring the entire IT curriculum (AAS and BPS) provides students with information technology skills that are aligned with the most contemporary industry standards. It was also reported that courses aligned with the IT programs at our
Community Colleges are regularly reviewed by the advisory committee for currency and consistency with industry needs.

### 3 – Teaching & Learning Methods

In considering the question of how the AAS-PS IT program supports effective teaching & learning methods, the following questions were considered:

- How do faculty work collaboratively to improve teaching or is teaching primarily an individual responsibility?
- What teaching-with-technology resources - beyond personal knowledge of the instructor – are provided?
- In what ways is the Virtual Library used in courses in the AAS-PS program?
- What T&L resources are provided via the RODP website are particularly helpful to instructors and students?

Professional development in the selection and use of instructional technologies is available for all RODP faculty and adjunct instructors, including instructors in the AAS-PS program. Many (if not all) individual campuses have people and resources at the local level and TBR provides an additional layer of support to augment what is at the local (campus) level. TBR offers instructional technology support in multiple forms: (1) traditional face-to-face in a classroom, (2) synchronous online through web-conferencing and audio, (3) asynchronous via static documents, training guides, self-paced courses, and online multi-media formats.

During the summer semester, focused "institutes" are generally offered at various locations across TBR that will emphasize very contemporary topics. For example, in the summer of 2013, the ROCC summer academy had 2 sessions on MOOCs and the possibility of offering courses in the IT program through MOOC platform as a way to benefit from these new technologies and help energize the program and benefit the AAS-IT program with these new initiatives.

In terms of faculty collaboration, the study participants reported that many faculty members help each other through informal networks of communication and discussion that are a natural by-product of the very collaborative nature of RODP itself. Faculty collaboration is embedded into the culture of RODP and reinforced through a variety of structures, activities, and communication technologies offered via the RODP offices at TBR. A specific example of an information collaboration networks is the use of online discussion areas for faculty within the course management environment. Formalized collaboration is achieved through the QM (Quality Matters) standards that are applied to all of RODP. Selected campuses in the program encourage formal collaboration through local IT committees and industry steering groups.
Instructors in the RODP AAS-PS program require ongoing skills development to stay current with the use of instructional technologies and RODP received strong marks from the study participants in providing for that need. Most campuses provide local training and support services for faculty during regular business hours and RODP instructors are able to participate in using these services. Additionally, RODP provides a variety of 24x7 technical support (both telephone helpdesk and online) for instructors and students alike. For instructors, this support also includes pedagogical assistance as well.

Regarding the RODP Virtual Library: although it is made available to all RODP instructors, respondents to the AAS-PS self-study reported inconsistent awareness and use of it. Some reported extensive use of the Virtual Library in their online courses while others were not aware of its existence. Several students reported little direction and use of the Virtual Library in their courses. This is a potential area of improvement for the program.

Other positive comments regarding teaching & learning resources for the AAS-PS program include:

- The 24x7 help-model was broadly reported as extremely useful to the RODP community. The model is successful and helped answer any technical questions and difficulties students have.
- The online RODP bookstore was reported as quite valuable.

Areas of improvement recommended for teaching & learning support in the AAS-PS IT program include:

1. Extending the 24x7 help-model to include real-time, synchronous tools for instructor assistance. These could include video-conferencing, web conferencing, or desktop sharing technologies.
2. Consideration of an improved compensation model for required course rework was recommended.

### 4 – Student Assessment

In the area of student assessment, the following questions were addressed:

- How are student learning assessments developed?
- In what ways does the AAS-PS faculty work collaboratively to develop assessments that effectively address the program learning objectives?
- How effective are course assessments in measuring the degree to which students are achieving program objectives?
- Other than “traditional” tests, in what ways do instructors effectively gauge student learning?
• What data is available for instructors in terms of student assessment results?
• How is assessment data used to improve the curriculum and/or teaching practices of instructors in the AAS-PS program?

As with all ROCC online courses, individual course developers from various colleges are largely responsible for all content design and development including assessments, provided the course meets and adheres to the overall standard of the ROCC Instructional Design Team. Therefore, while there is an overall continuity in terms of the structure, navigation and design for newly developed courses, actual decisions on assessment vehicles are still primarily made on a course-by-course basis by the original course designer and occasionally in conjunction with other faculty. According to the results of the survey, course developers largely report that they design assessment approaches to support the desired course learning objectives. Specific examples of assessment models in the AAS-PS program include use of discussions, real-world types of assignments, hands-on projects, group projects and publisher-supplied test-banks.

Collaborative development of assessments while improved since the previous Academic Audit of the AAS-PS-IT largely remains an individual course developer’s and instructor’s responsibility. This is not an issue that is specific to AAS-PS-IT, but rather a part of the general ROCC nature inherent in the culture of distance education itself. Because of this, specific assessment strategies still remain largely defined by individual course designers. As indicated by the survey results, faculty would like to see coordination at the RODP level, for encouraging and providing more opportunities for collaborations between developers on course design and assessment. This could be included as part of a broader plan for program improvement.

Specific methods used to gauge student learning include:

• Homework assignments
• Traditional tests/exams
• Hands-on exercises and group/individual projects
• Class discussions

Survey results indicate that instructors feel confident in their measures of assessment in terms of the individual outcomes for a particular course. Less clear is whether faculty feel those measures of assessment meet the broader program outcome goals of AAS-PS-IT or how and what the program objectives are in terms of AAS-PS-IT.

As such, the most commonly-reported data that is used by faculty to measure student assessment is drawn from at the course level by the course developer and includes the methods of assessment in the bulleted list above. Students are made aware of their
performance in the class via the online gradebook in the course available in the Desire2Learn software. Faculty and course developers can use this assessment data along with course evaluations to make modifications to the course content as necessary or specific assessment activities to better achieve the course learning outcomes. Again, however, the application of the assessment data occurs at the course level by individual faculty and course developers and does not occur at the program level.

The results of the survey indicate that many of the improvements for assessment are similar to those results reported in the previous academic audit and again focuses more on how the individual course objectives map to the broader AAS-PS-IT objectives and how that information is communicated among faculty and course developers. Specific recommendations for improvements in assessment included:

1. Coordination among the various courses so each instructor or developer knew what assessments another was using.
2. Mapping individual course assessments to specific course objectives and then further mapping between individual courses objective and the AAS-PS-IT program objectives.
3. Improving awareness of overall program goals and learning objectives so that this information can be used to develop specific assessment approaches.
4. Increased communication and collaboration between developers, instructors and ROCC administration on matters related to course assessment and how those assessments can meet the broader program outcomes for AAS-PS-IT.

5 – Implementation of Quality Education

Questions considered regarding how the AAS-PS program insures a quality education experience include:

- How do we assure ourselves that each course in the curriculum addresses agreed upon content, that sound teaching practices are carried out appropriately and consistently, that assessments are conducted as planned, and that agreed upon plans to improve courses or the program as a whole are implemented by those responsible?

- How do we assure ourselves that other faculty activities affecting students, such as academic advisement, are being performed appropriately and consistently?

- Do we provide meaningful, timely feedback and recognition to faculty regarding how they are performing work related to the curriculum, teaching and learning, assessment, and other practices affecting students?
• Do we provide meaningful, timely feedback and recognition to faculty regarding how they are performing work related to the curriculum, teaching and learning, assessment, and other practices affecting students?

• Do we identify best practices in quality assurance and use this information to improve how we assure that the work of the program is performed appropriately and consistently?

Consistency and agreement of course content across sections of a given course is central to the ROPD QM model and this is accomplished in a variety of ways. For example, courses are cloned from the master copy only. Adjunct faculty members are permitted to make minor changes and adjustments. If a faculty member wishes to add input or make major changes to the course, they should contact the course developer and make recommendations. Only the developer can make major changes. The course developer and the instructor work together on the updates. Additionally, all instructors are assigned a mentor in addition to the course developer. The course developer is available to give assistance and has access to all cloned courses. The developer can check in on the course throughout the semester to see that the course is proceeding as planned. The mentor is also available to answer any questions. This practice ensures that someone is available to answer any questions that might arise.

Other faculty activities affecting students (e.g., advising) accomplished in a variety of ways, including:

• All campuses have an RODP adviser. Some campuses have more than one. Faculty members who are not RODP advisers also help with the academic advisement of our RODP students.
• All RODP offerings are listed in banner where students can find RODP courses.
• Information about RODP programs is consistently communicated via the RODP website, statewide marketing and campus-level websites and catalogs.

At the campus level, a variety of approaches are used to communicate program content to students including:

• Flyers on bulletin boards.
• Bulk mailing each semester to prospective enrollees.
• Listing RODP course offerings in printed schedules. Note: Many campuses are no longer printing schedules.
• Each student majoring in this program is assigned to a faculty advisor who works with that student throughout his program. The advisor is also available by email and phone.
• Personal communications with students via course email and discussion board.
- All RODP offerings are listed separately in printed class schedules. Some multi-
  media are used. For example, a podcast is available on the Cleveland State web site
  which provides information about RODP.
- The RODP Student Contact and Dean of Student Academic Support Services
  participate in Adult Info sessions held in the fall at various campus sites as well as
  other events.

Meaningful and timely feedback is provided to faculty regarding how they are performing
work related to the curriculum, teaching and learning, assessment, and other practices
affecting students in many ways, including:

- Articulation of RODP courses are updated annually.
- Course evaluations, student evaluations faculty evaluations are performed each
  semester.
- This is discussed at meetings of the Distance Education Committee.
- CSCC students are asked to participate in various surveys including the Enrolled
  Student Survey; Alumni Survey and Employer Surveys. Students who graduate are
  asked to complete the Graduate Placement Survey.
- Formal end-of-semester surveys are conducted and the results shared with all
  instructors. Additionally, RODP is in the early stages of an effort to address student
  persistence and degree completion rates. Regarding job placement, alumni surveys
  and program articulation, those are areas that offer opportunities for improvement
  for the AAS-PS program and RODP in general.

Best practices in quality assurance through the QM model are distributed to RODP mentors
who distribute this information to RODP faculty. Many of the mentors and faculty attend
conferences to learn more about how to improve courses. Workshops and discussions on
effective uses of technology have been offered throughout the history of the program.
RODP also offers smaller scale conferences that are easier and less expensive to attend.

Other facets to the QM model include:

- RODP Central Office offers outstanding support services.
- Individual college campus work hard to assist students.
- Meetings are conducted to assess services and brainstorm potential improvements.

In the area of instructor responsiveness, the student survey results exposed a significant
variance in quality and consistency of instructor feedback. While many students reported
excellent experiences with their instructors, a large number of written responses reflected
frustration and difficulty with timely feedback on emails, assignments, and other forms of
communication with their teachers.
In the area of individual course setup and quality, the results again exposed a significant variance in quality. Several students reported there was old content from previous semesters which caused confusion. Assessments and quizzes didn't actually measure acquired knowledge of the material.

The issue of instructor responsiveness and course quality is not new to RODP administration, but it does highlight the value of pursuing more aggressive quality-oriented activities.

Many very specific recommendations for improvements to the AAS-PS IT program were submitted by participants in this self-study report, but they can be summarized into four broad categories:

a. Investigate new technologies and software applications that would improve support and quality improvement in the AAS-PS program.

b. Study the current support structure in terms of staffing, lead instructor roles, committee responsibilities, etc. to identify ways to more effectively support continuous quality improvements.

c. Expand input means from instructors, students, and other stakeholders to identify ways by which student preparation, support and success can be actualized.

d. Continue executing with a renewed emphasis on responsiveness of instructors during the semester and follow-through on current initiatives to upgrade and enforce QM standards in that respect.
Summary of Potential Recommendations and Initiatives

Throughout this self-study report, there are scattered many excellent recommendations for program improvement. Some were reported by single individuals while others were widely reported. Some were specific to the AAS-PS IT program and others were more generalized to all of RODP. Below is a summarization of the strongest and most widely-noted recommendations.

Recommendations specific to the AAS-PS IT Program:

1. More complete and effective communication of the AAS-PS IT program via the RODP website, including information such as: (a) Why a student would want to complete this degree, (b) What transfer options are available from the program, (c) What type of jobs might the graduate obtain.

2. Focused effort should be employed on program articulation including: (a) pre-requisites and transfers, (b) articulation within the program, and (c) articulation with bachelor’s programs. This could involve a regular schedule of annual meetings with curriculum subcommittee, course designers, and selected instructors.

3. More interaction between instructors, developers and industry representatives (advisory council) as well as stronger overall communication and coordination between developers, sub-committee, and campuses.

4. Improved co-curricular learning experiences for students such as a statewide programming competition, technology clubs, or internship/co-op opportunities.

Recommendations generalized to all of RODP

1. Continued efforts to improve overall instructional quality with particular emphasis on timely responsiveness and feedback on emails, discussions, and assignments.

2. Recommending that the AAS IT graduate survey be adapted to the BPS IT graduate survey. Also we recommend that the result of the survey will be communicated to the RODP Curriculum committee.
## Matrix of Improvement Initiatives

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Who</th>
<th>When</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop plan to apply quality matters (QM) course review by RODP personnel to all required and elective courses in the AAS-IT degree program.</td>
<td>This will be coordinated through the central RODP offices but depend heavily upon course developers and others close to the AAS-PS program.</td>
<td>Fall 2014 through Summer 2015.</td>
</tr>
<tr>
<td>Develop an eBrochure that will delineate: (a) what kind of skills are offered by the degree program (b) what kind of jobs are expected by these skills (c) the salary range in each job (d) testimonial from graduates in the IT field.</td>
<td>Coordination will be through the AAS/BPS IT subcommittee in collaboration with RODP central office.</td>
<td>This is urgent and needs to be done before August 2014.</td>
</tr>
<tr>
<td>Pursue best practices in online co-curricular activities and implement additional extracurricular programs.</td>
<td>Leadership on this initiative should come from the RODP training team and involve all developers, instructors, and mentors involved in the AAS-PS program.</td>
<td>This will be an ongoing initiative that can begin in AY 2015, but continue for a number of years.</td>
</tr>
</tbody>
</table>
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## Appendix A - AAS-PS IT Course Requirements

### Associate of Applied Science Degree (A.A.S.)

#### Course Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COL 101</td>
<td>Orientation: The College Experience</td>
<td>3</td>
</tr>
</tbody>
</table>

RODP Requires General Education Core (15-16 hours)

<table>
<thead>
<tr>
<th>ENGL 1010</th>
<th>English Composition I</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 2110</td>
<td>American Literature I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2120</td>
<td>American Literature II</td>
<td>3</td>
</tr>
<tr>
<td>*ENGL 2210</td>
<td>English Literature I</td>
<td>3</td>
</tr>
<tr>
<td>*ENGL 2220</td>
<td>English Literature II</td>
<td>3</td>
</tr>
<tr>
<td>*ENGL 2410</td>
<td>Western World Literature I</td>
<td>3</td>
</tr>
<tr>
<td>*ENGL 2420</td>
<td>Western World Literature II</td>
<td>3</td>
</tr>
<tr>
<td>*MUS 1030</td>
<td>Music Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>*PHIL 201</td>
<td>Introduction to World Religions</td>
<td>3</td>
</tr>
<tr>
<td>*PHIL 1030</td>
<td>Introduction to Philosophy</td>
<td>3</td>
</tr>
</tbody>
</table>

Mathematics/Science (choose one)

<p>| ASTR 1030     | Astronomy and Lab                                      | 4            |
| BIOL 1010     | Biology I &amp; Lab                                        | 4            |
| BIOL 1020     | Biology II &amp; Lab                                       | 4            |
| CHEM 1010     | Introduction to Chemistry I and Lab                    | 4            |
| CHEM 1020     | Introduction to Chemistry II and Lab                   | 4            |
| MATH 1130     | College Algebra                                        | 3            |
| MATH 1530     | Probability/Statistics (non-calculus based)            | 3            |
| MATH 1630     | Finite Mathematics                                     | 3            |
| MATH 1710     | Precalculus I                                          | 3            |
| MATH 1720     | Precalculus II (Trigonometry)                          | 3            |
| MATH 1830     | Intuitive Calculus                                     | 3            |</p>
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1910</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 1920</td>
<td>Calculus II</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 1030</td>
<td>Concepts of Physics and Lab</td>
<td>4</td>
</tr>
<tr>
<td>Social Science (choose one)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ECON 2010</td>
<td>Economics I</td>
<td>3</td>
</tr>
<tr>
<td>ECON 2020</td>
<td>Economics II</td>
<td>3</td>
</tr>
<tr>
<td>*GEOG 2010</td>
<td>World Regional Geography</td>
<td>3</td>
</tr>
<tr>
<td>POL 1010</td>
<td>US Government and Politics</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 1030</td>
<td>General Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 1010</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOCI 1020</td>
<td>Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>*SOCI 1120</td>
<td>Introduction to Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>Oral Communication</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SPCH 1010</td>
<td>Fundamentals of Speech Communication</td>
<td>3</td>
</tr>
<tr>
<td>Technical Concentration (27 hours - all 9 courses required)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INFS 1010</td>
<td>Computer Applications</td>
<td>3</td>
</tr>
<tr>
<td>CISP 1610</td>
<td>Programming in C++</td>
<td>3</td>
</tr>
<tr>
<td>INFS 113</td>
<td>Visual Basic</td>
<td>3</td>
</tr>
<tr>
<td>INFS 186</td>
<td>Database Programming</td>
<td>3</td>
</tr>
<tr>
<td>CMT 1010</td>
<td>Networking/PC Communications</td>
<td>3</td>
</tr>
<tr>
<td>IST 2630</td>
<td>Web Page Development &amp; Design</td>
<td>3</td>
</tr>
<tr>
<td>INTC 1050</td>
<td>Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>CST 209</td>
<td>Java Programming I</td>
<td>3</td>
</tr>
<tr>
<td>CST 203</td>
<td>Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>Technical Electives (9 hours - choose 3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CST 218</td>
<td>Java Programming II</td>
<td>3</td>
</tr>
<tr>
<td>INFS 111</td>
<td>Introduction to Android Mobile Programming and Logic</td>
<td>3</td>
</tr>
<tr>
<td>INFS 173</td>
<td>Programming in C#</td>
<td>3</td>
</tr>
<tr>
<td>CIS 193</td>
<td>Introduction to Linux</td>
<td>3</td>
</tr>
<tr>
<td>CIS 264</td>
<td>Web Page Applications</td>
<td>3</td>
</tr>
<tr>
<td>WEB 2811</td>
<td>Advanced Computer Graphics</td>
<td>3</td>
</tr>
<tr>
<td>WEB 2812</td>
<td>Advanced Web Page/Site Design</td>
<td>3</td>
</tr>
<tr>
<td>ACCT 1010</td>
<td>Principles of Accounting I</td>
<td>3</td>
</tr>
</tbody>
</table>
Electives (5 - 6 hours)

Electives may be chosen from the list of freshman/sophomore courses.

**Total Hours in A.A.S. Degree = 60 hours**

*course containing at least one component of international content*
Appendix B – Detailed List of Educational Improvements Suggested by AAS-PS Stakeholders

- I really don’t think that there is a problem with this communication, as long as the information is available to website users and students and that it is easily accessible.
- That process could be communicated at course developer training as well as during the initial proposal for the course. This way the developer would know what the process is for revisiting course objectives. Typically once the course is approved, there is little interaction among the various institutions.
- Program learning objectives need to be displayed to students on the RODP web site.
- Improvement in the IT program could most likely be improved by developers and other stakeholders having more time available to these tasks. (Particularly for Community College faculty the 15 hour teaching load makes this very difficult.)
- That process could be communicated at course developer training as well as during the initial proposal for the course. This way the developer would know what the process is for revisiting course objectives. Typically once the course is approved, there is little interaction among the various institutions.
- Communication between Faculty developers, and IT subcommittee, Curriculum Committee is always occurring. The ROCC summer academy has played an important role in helping in that regard.
- AS I mentioned in my previous comment. I think that RODP needs to look at the use synchronous vs asynchronous delivery systems. I really think that although RODP built their system based on learning anywhere at anytime. There needs to be allowances made for allowing tools like conferencing or creating hybrid courses not necessarily as a required meeting time, but as a way for students to have an opportunity to network and learn and discuss ideas and concepts. A tool such as WIZIQ, Adobe Connect are great tools for learning and even if a student cannot participate you can video capture the meeting, or schedule meetings at different times to suite the different groups of students. Although truly online classes provide learning anywhere/anytime, if you look at retention studies hybrid class tend to provide a higher level of retention and success in the course.
- Better communication from administration, committees at the RODP level and opportunities to interact with other RODP faculty with a plan to work toward improving the curriculum.
- The RODP web site needs to be seriously updated. For this program they only list the courses a student has to take. It does not tell the student what the degree does, what type of job you can get, or anything of that nature.
- Online teaching is much more demanding and time consuming than traditional on-ground courses. Adjustment of the teaching load would provide faculty to better serve the student.
- Better communication from administration, committees at the RODP level and opportunities to interact with other RODP faculty with a plan to work toward improving the curriculum.
- ROCC needs to read the student evaluations to see what students are saying. The response time for faculty to respond to students' e-mails is 48 hours. This should be 24 hours during the week and not at all on the weekend.
- Good faculty would love to be recognized in some small way.
- Keep up all the processes in place including the mentor program, the RODP help desk, the IT subcommittee and the curriculum committee as they work very hard to ensure high quality courses.
- more collaboration
- Supervision to ensure that all sections follow the master course with regard to both delivery and assessment. This is not always done. Opening a course when it is up for revision to the competition of all the institutions for development.
- Better communication! More information sent to the campus about the ROCC committees that affect the program.
- transparency with program and course objectives. transparency with when the syllabus was last updated. Have a library expert and an IT expert be part of the new course development.
- More concerted marketing support for the college and the RODP degree programs.
- RODP may need to take a more active role in advising, as well as a careful look at needs in each area of the state as they relate to jobs and outcomes of the program. Also, a complete look at program outcomes for all involved parties would be helpful when advising students.
- Better evaluation data available to schools

- PERHAPS, IMPROVED ACCESS TO THE INFORMATION THAT IS BEING REQUESTED BY THIS SURVEY.
- We need an easier way to create and edit quizzes.
- Testimonials from current students would be helpful. Employer studies on how well-prepared graduates are to address job demands would be extremely useful in evaluating effectiveness and program relevancy.
- I am recommending that a designated campus librarian is consulted when master courses are developed. From previous review of this program, I recall that there is little if no use of the Virtual Library, either the campus library of the instructor, or the RODP Virtual Library. The courses appear to be closely related to their textbook and this may be ok for these courses. There are however aspects of familiarizing students with online library resources that speak to enrichment and updating of student learning. Their exposure to online resources via their instructor’s library or the RODP Virtual Library, and to subject guides maintained by librarians may provide them with learning opportunities, with information literacy opportunities that will assist them while taking courses and later on in their chosen careers.
- When a campus librarian is involved in the Master course creation, the library and librarian will then be better able to participate in a program review such as this.
- The ROCC summer workshops were the most helpful that I attended all of last year. It brought together individuals from a range of disciplines to interact and learn about how to make ROCC better for the students.
Appendix C – Detailed List of Educational Improvements Suggested by AAS-PS IT Graduates

- If there were any way to give more "real world" programming experience that would be great. Rather than starting people out with C++ (not so commonly used) and doing a couple classes in that, I'd start off with javascript (also easily approachable) or c# (less approachable due to the typical IDE being Visual Studio) as they are more mainstream.
- Give more options for courses.
- I would do more face to face instruction (even thru Skype), would be helpful with some of the programming classes.
- More current/relevant information. Technology changes at a fast pace, and sometimes the material being taught is out of date to current standards (especially in the area of web design). Offering courses in PHP would be a huge advantage as well
- More ability for on the job course credit would be nice.
Appendix D – Results of the IT Graduate Survey

1. Overall, how satisfied are you with your ROCC/RODP education? (5 Responses)
   - 40.0% Very Satisfied
   - 50.0% Satisfied
   - 0.0% Dissatisfied
   - 0.0% Very Dissatisfied
   - 0.0% Not Applicable

2. Based on the instruction you received in the program, how satisfied are you with your ability to perform the following tasks:

<table>
<thead>
<tr>
<th>Task Description</th>
<th>R</th>
<th>VS</th>
<th>S</th>
<th>DS</th>
<th>VD</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Use an integrated commercial software program to complete business applications in word processing, spreadsheet, presentation graphics, and database management.</td>
<td>5</td>
<td>40.0%</td>
<td>60.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>b. Design user interface and forms to access a relational database using an object-oriented programming language.</td>
<td>5</td>
<td>40.0%</td>
<td>60.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>c. Solve problems by programming in an object-oriented language using standard programming constructs such as data types, assignment statements, use of subprograms, loops, conditional statements, arrays, records, and classes.</td>
<td>5</td>
<td>40.0%</td>
<td>60.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>d. Solve programming problems using standard data structures such as lists, stacks, queues, and trees.</td>
<td>5</td>
<td>40.0%</td>
<td>60.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>e. Discuss network administration issues and recommend basic network troubleshooting solutions.</td>
<td>5</td>
<td>40.0%</td>
<td>60.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>f. Design and create web pages using web page editing/authoring software and edit graphic images and animations for web pages using image editing software.</td>
<td>5</td>
<td>40.0%</td>
<td>40.0%</td>
<td>0.0%</td>
<td>20.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>g. Create and edit graphic images and animations for web pages using image editing software.</td>
<td>5</td>
<td>40.0%</td>
<td>60.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

3. How satisfied are you with the factors listed below, only as they pertain specifically to the IT program?

<table>
<thead>
<tr>
<th>Factor Description</th>
<th>R</th>
<th>VS</th>
<th>S</th>
<th>DS</th>
<th>VD</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Faculty quality of instruction</td>
<td>5</td>
<td>40.0%</td>
<td>60.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>b. Faculty competence in major field</td>
<td>5</td>
<td>40.0%</td>
<td>60.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>c. Innovative methods of instruction</td>
<td>5</td>
<td>40.0%</td>
<td>60.0%</td>
<td>0.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>d. Availability of faculty for assistance</td>
<td>5</td>
<td>40.0%</td>
<td>40.0%</td>
<td>20.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>
4. How helpful were your educational experiences in the following?

<table>
<thead>
<tr>
<th>R</th>
<th>VH</th>
<th>H</th>
<th>SH</th>
<th>NH</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Preparing for a new career in my chosen field or increasing my chances for a raise/promotion with your present employer</td>
<td>5</td>
<td>40.0%</td>
<td>20.0%</td>
<td>40.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>b. Increasing knowledge in my professional field</td>
<td>5</td>
<td>40.0%</td>
<td>0.0%</td>
<td>60.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>c. Improving teamwork skills</td>
<td>5</td>
<td>20.0%</td>
<td>60.0%</td>
<td>20.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>d. Improving problem solving skills</td>
<td>5</td>
<td>40.0%</td>
<td>60.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>e. Increasing analytical/critical thinking skills</td>
<td>4</td>
<td>25.0%</td>
<td>75.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>f. Improving computer skills</td>
<td>5</td>
<td>40.0%</td>
<td>60.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>g. Improving research skills</td>
<td>5</td>
<td>40.0%</td>
<td>60.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>h. Improving organizational skills</td>
<td>5</td>
<td>40.0%</td>
<td>60.0%</td>
<td>0.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>i. Improving verbal communication skills</td>
<td>5</td>
<td>20.0%</td>
<td>60.0%</td>
<td>20.0%</td>
<td>0.0%</td>
</tr>
<tr>
<td>j. Improving written communication skills</td>
<td>5</td>
<td>40.0%</td>
<td>40.0%</td>
<td>20.0%</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

5. Which of the following do you use in your job? (Select all that apply) (4 Responses)

- 0.0% C++
- 25.0% C#
- 25.0% Java
- 75.0% SQL
- 25.0% Visual Basic
- 50.0% Other

6. Other (please specify)

1. javascript, css, html
1. PHP

7. What is your current job status? (5 Responses)

- 60.0% Employed full-time or business owner
- 20.0% Employed part-time
- 20.0% Unemployed by choice
- 0.0% Unemployed/looking for work
- 0.0% Continuing education

8. What is your job title?

1. Software Engineer
1. Network Administrator
1. Clerk
4. Senior IT Technologist

5. What is your employer? (optional)
   1. ups
   1. The University of Tennessee

10. How related is your present employment to your major program of study? (4 Responses)
   75.0% Closely related
   0.0% Somewhat related
   25.0% Not at all related

11. What would you consider to be the program's strengths?
   1. Ease of access
   1. The ability to earn a degree while working.
   1. Online courses, able to work on our own time, and pace

12. What are your suggestions for improving the program?
   1. If there were any way to give more "real world" programming experience that would be great. Rather than starting people out with C++ (not so commonly used) and doing a couple classes in that, I'd start off with Javascript (also easily approachable) or C (less approachable due to the typical IDE being Visual Studio) as they are more mainstream.
   1. Give more options for courses
      1. I would do more face to face instruction (even thru Skype). would be helpful with some of the programming classes.
   1. More current/relevant information. Technology changes at a fast pace, and sometimes the material being taught is out of date to current standards (especially in the area of web design). Offering courses in PHP would be a huge advantage as well.

13. Please add any other comments you might have.
   1. More ability for on the job course credit would be nice.

The purpose of this e-mail is to provide a full overview of the Regents Online Campus Collaborative (RODP/ROCE) Quality Standards and Measurements for programs, courses, faculty, and operations. This information should be included as part of campuses’ QEP, SACS, Self-Studies, Academic Audit Reports. (Please forward to the appropriate persons on your campus.)

The Tennessee Board of Regents approved in 2006 the TBR eLearning (RODP/ROCE) Strategic Plan. One of the goals is the assurance of Quality Programs and Standards for Excellence in Teaching and Learning Online:

- RODP Programs and Courses must have the same content, rigor, and outcomes as on-ground programs.
- RODP Programs and Services must be monitored and evaluated as on-ground programs.
- RODP Programs and Services must be part of SACS, COE, QEP, TBR Strategic Plan, Academic Audit, and other accreditation plans, studies, and assessments to ensure quality and continuous program improvements.
- RODP/ROCE SACS System Wide Substantive Change was conducted and approved 2003.

Outlined below are the quality standards established to monitor and measure RODP Programs and Services (based on best practices and standards by SACS, SREB-SREC, CHEA, WCET, BOUA, NCATE, THEC, NLNAC, TN Graduate Deans, external consultants, internal audits, risk assessments, etc.)

1. Reminders: RODP is a coordinating body of Academic Affairs. RODP cannot award degrees, cannot admit students, and cannot hire or assign faculty to teach RODP classes. Therefore, all schools are responsible for overseeing the quality of RODP Programs on their campus. (The Chief Academic Officers and the TTC Center Directors are responsible for the oversight and implementation of RODP/ROCE.)

2. All RODP Programs are accredited through each institution. *Accreditation is a high-standard guarantee and assurance of high standards and educational quality through the institution’s adherence to established criteria, policies, and standards.

**RODP Programs Quality Reviews:**

a. RODP Proposed Courses, Programs and Curriculum are first reviewed by a program/discipline sub-committee and then voted on by the RODP System Wide Curriculum Committee (consisting of campus representatives from each institution). These committees address the content, rigor, scope and sequence, comparison with on-ground syllabus and requirements, and professional societies’ standards.
b. The Campus RODP Curriculum Representative is responsible person for submitting the proposed courses and programs to their local curriculum committees for review, feedback, and recommendations to the RODP System Wide Curriculum Committee.

c. RODP Courses are reviewed by a Team of Peer Reviews (content reviewer, instructional designer, and ROCC staff for best practices) using the Quality Matters TBR Standards.

d. ALL RODP Instructors must be SACS certified and verified prior to the consideration to teach a RODP Class. (Each campus is responsible for documenting the SACS credentials for their instructors. However, as a second safety check, the RODP Office maintains an online data base of the instructors’ credentials including the instructors’ transcripts.)

e. All instructors are required to attend training (D2L, pedagogy of online teaching and learning, RODP Quality Teaching Standards) prior to teach a RODP Course. Instructors are to provide the same amount of time and activities as on-ground courses.
   a. Logging into course at least three times per week (promoting participation, communication, engagement, interactions) that have been proven to increase retention rates.
   b. Replying to students’ e-mails with forty-eight hours.
   c. Grading and providing feedback to students’ assignments, activities, and exams within two weeks.
   d. Fostering student collaboration, engagement, interaction, higher order thinking, etc.
   e. Incorporating appropriate student support activities to assist students that need supplementary resources (tutoring, advising, etc.)

f. RODP Courses are evaluated every fall and spring semester by an external research group (ETSU Research Center)
RODP Courses are updated annually using feedback from all sectional faculty.

g. RODP Courses must be fully updated and redesigned every three years.

h. RODP Courses are assessed in terms of retention, withdrawals, and failure rates. Courses with 60% withdrawal and failure rates are reviewed in terms of five variables:
   a. Course Design
   b. Subject Matter and Learning Outcomes
   c. Student Preparation (computer skills, time management, self-discipline, D2L skills, etc.)
   d. Teaching (training, pedagogy, participation, interaction, communication)
   e. Delivery (CMS (Desire to Learn) technical problems, etc.)

i. Campus Administrators coordinate and administer the appropriate faculty assessment for their RODP Instructors

j. RODP administers annually a faculty evaluation to assist in identifying areas for training, resources, and improvements (RODP maintains a committee for RODP Evaluation and Assessments)

k. RODP Programs for Quality Standards and implementation are evaluated and monitored by the TBR eLearning Oversight Committee that meets quarterly.
l. RODP Programs and Services Updates are presented as part of the standard agenda at the Academic Sub-council, Faculty Sub-council, and Student Affairs Sub-council.

m. RODP Programs and Services are evaluated by the TBR Oversight Committee, Academic Affairs, TBR, THEC, SACS, and the appropriate accrediting body.

n. RODP Programs are part of the scheduled TBR Academic Audit (currently the AAS in Informational Technology is being audited).

o. RODP Programs and Services are reviewed annually (results on file) to measure the goals and objectives of the eLearning Strategic Plan for program improvements.

p. All RODP Programs and Services are viewed every time a school or center within TBR has a SACS or COE Accreditation Visit (basically every semester).

q. ROCC Student Services (recruiting, marketing, registration, admission, advising, bookstore, library services, students services, student support, technical services, etc.) are evaluated every fall and spring semester by external research center (ETSU).

r. Virtual Library is evaluated every other year.

s. RODP/ROCE Programs and Operations are evaluated every three years by an external consultant (from another virtual university system).

t. RODP Programs are part of the five year THEC Performance Reviews.

u. RODP Programs must participate in alumni surveys (to determine any significant differences in terms of job opportunities and performance).

v. CMS (D2L) annual evaluation (performance, services, updates, communication)

w. ROCC Equipment Inventory Audit (annual review))

x. ROCC Budgets and Grants (annual review / internal audits)

y. ROCC Risk Assessment Audit and Monitoring

Note: All assessments, evaluations, reports, studies, program proposals, program improvements, operational procedures, budgets, revenues, minutes, etc. are located online Regents Online Campus Collaborative (RODP/ROCE) Online Document Center (password protected)*Forward e-mail to access center.

2008-2009 RODP/ROCE Program Challenges (based on data) *Procedures for Addressing Issues and Problems are located on the RODP Website

1. Increase in enrollment (33%) that impacted the ordering and delivery of textbooks. (Committee is investigating eTextbooks)

2. Faculty Training (new instructors have expressed the need for additional training once starting the class)
3. Course Design and Update (incorporation of best standards for instructional design and multimedia)
4. Students’ Feedback (encourage instructors to the three times a week log-ins and to provide and grade activities within the two weeks)
5. RODP Campus Contacts (Single Sign-on for Students)
6. Campus Staff (increase in the number and time for proctoring especially after hours and on the weekends)
7. Faculty (D2L Gradebook)
8. CMS / ITAG (Removing data from D2L Server)
9. Admissions and Records & Distance Education & Faculty (Registration: Real Time Integration)

Program Improvement Goals

1. Online Retention
2. Student Online Services and Support
3. Course Redesign (instructional design, multimedia enhancements, support services)
4. Establish Faculty Professional Discipline Communities (curriculum improvement and pedagogy of teaching noted disciplines online)

Objectives:

1. To identify low retention and high failure courses (Math, Spanish, Biology) and develop retention improvement plan.
2. To update the instructional design and multimedia of high demand courses (starting with general education core)
3. To establish content mentors for high demand general education core courses
4. To convene eLearning Summer Academies for Disciplines: Math, Spanish, English, Biology, History
5. To update faculty training to include follow-up training and support services.
Appendix F – Computerworld’s “8 hot IT Skills for 2014”

Here’s a look at the IT skills that will be in demand next year, according to companies with plans to hire IT professionals in 2014.

1. Programming/application development
   • 49% of respondents said that they plan to hire for this skill in the next 12 months.
   • Last year’s ranking: No. 1

As it did in the 2013 Forecast survey, programming/application development tops the list of hot skills, although just under half of the 221 respondents said they will hire in this area, compared with 60% last year. Scot Melland, CEO of Dice Holdings, parent of IT jobs website Dice.com, concurs that software developers are the most sought-after technology workers and notes that they enjoy one of the lowest unemployment rates around -- just 1.8%, according to the U.S. Bureau of Labor Statistics. It’s no wonder, then, that respondents to the Computerworld 2014 Forecast survey named developer and programmer job openings as the most difficult to fill. The hottest specialties within that category, Melland says, are mobile development expertise and experience building secure applications. Carbonite, an online backup service provider, expects to find a tight market for software developers and engineers as it shifts its business model to focus on the needs of small businesses, says Randy Bogue, vice president of talent at the Boston-based company. "While there are a lot of experienced software developers in the Boston area, there are just as many technology companies looking to hire them," he says. "We find this while looking for front-end developers, user experience engineers, mobile developers and pretty much any other software development position." Lucille Mayer, CIO at BNY Mellon, also expects to have difficulty finding developers. The financial services company has several hundred openings, mainly in New York City and Pittsburgh, and about 40% of those are in development. Another 30% are in infrastructure, 20% are for business analysis/project management positions, and 10% are in management. "Demand is high for skilled developers with three to five years’ experience and a service delivery orientation," says Mayer, who is particularly interested in people with object-oriented development experience. Also important is finding people from diverse backgrounds, with diverse ideas and perspectives, she says. Hospitality giant Hyatt is transitioning from a reliance on third-party service providers and aims to bring more development talent in-house. "We're looking to hire people who embrace agility and speed to move ideas to prototype and production quickly," says Alex Zoghlin, Hyatt’s global head of technology.

2. Help desk/technical support
   • 37% of respondents said that they plan to hire for this skill in the next 12 months.
   • Last year's ranking: No. 3
Help desk/tech support remained near the top of the list, moving up from No. 3 last year. Melland says that's an encouraging sign for the economy and the overall hiring outlook. "Organizations mainly add help desk and tech support when they're adding workers and expanding their technology infrastructure," he says. Also contributing to demand for support technicians is the fact that many companies are bringing the help desk back in-house after outsourcing that function; that's partly a response to the proliferation of mobile devices and company-provided Web services. Because of the complexity of such setups, "it’s important for support staff to really understand what the company is doing, which argues for having this function closer to home," Melland says. After several years of running a lean support function, Wolverine Advanced Materials in Dearborn, Mich., plans to hire a few help desk staffers in response to business growth and a decision to provide ITIL-based service management, says James Bland, network manager at the automotive materials supplier. "There is growth in the company, so we're more confident in hiring," he says.

### 3. Networking

- 31% of respondents said that they plan to hire for this skill in the next 12 months.
- Last year’s ranking: No. 8

Demand for networking skills jumped to No. 3 from eighth place last year. This correlates with the results of a recent survey by IT hiring firm Robert Half Technology, in which 55% of the respondents named network administration as the skill set most in demand, along with database management. The need for wireless connectivity is probably behind the interest in networking professionals, Melland says. "Demand for people with wireless networking experience is up 9% year over year," he says, and the unemployment rate for network and systems administrators is 1.1%. Charles Whitby, lead network analyst at the Medical Center of Central Georgia, says growing use of wireless medical devices is definitely fueling his workload. In addition to the increased network traffic they produce, those devices require a lot of troubleshooting -- as is the case when, for example, their firmware needs upgrading but it hasn't been approved by the Food and Drug Administration, he says. Meanwhile, at Wolverine, Bland is looking to offload some networking responsibilities so he can concentrate on more strategic issues.

### 4. Mobile applications and device management

- 27% of respondents said that they plan to hire for this skill in the next 12 months.
- Last year’s ranking: No. 9

With mobile devices proliferating in both the corporate and consumer worlds, it's little wonder that mobile skills catapulted toward the top of the list, from No. 9 last year. And because of mobile’s relatively new status, it's also not surprising that Computerworld survey respondents named mobile expertise the third most difficult skill to find, after development and BI/analytics skills. Mobile app development is "a huge initiative" at PrimeLending in Dallas, says CIO Tim Elkins, and it will be a key hiring area next year. In
addition to expanding its Salesforce.com development ranks, the mortgage provider hopes to hire two or three mobile developers, he says. PrimeLending’s first mobile app is designed to enable its business partners -- real estate agents and builders -- to view loan statuses; its next one will be for consumers. Elkins anticipates difficulty finding mobile developers and is therefore training a couple of current staffers to fill the need. "Salesforce.com developers are really tough to find because of the high demand, and so are mobile developers," he says. Mobile expertise is also a priority for Hyatt, and Zoghlin says the company is trying to fill niche roles to ensure a consistent strategy across areas like mobility and user experience.

5. Project Management

• 25% of respondents said that they plan to hire for this skill in the next 12 months.

• Last year’s ranking: No. 2

While project management fell from its No. 2 position last year, it is considered a highly sought-after skill. Melland says that Dice has found demand for project managers to be second only to demand for software developers/engineers, having risen 11% from last year. That uptick, he says, is another positive sign for the economy as a whole, because it indicates that companies are willing to pursue strategic projects. Mondo’s Kirven attributes the demand for project managers to renewed interest in complex, strategic business-technology initiatives. "IT has historically been graded based on the success or failure of projects, so [companies are] making heavy investments in the business analyst/project manager layer," he says. "These people need to be able to talk to developers about technology and the right solution, but they also need to put on their business hat to gather requirements and prioritize needs and translate that into a programmable effort for IT."

6. Database Administration

• 24% of respondents said that they plan to hire for this skill in the next 12 months.

• Last year’s ranking: Not ranked

Database administration -- which didn’t even make last year’s list -- will be hot in 2014, likely because of interest in big data. Kirven concedes that the term big data is a catch-all for everything companies want to do with the burgeoning stockpiles of information they store on internal systems and, increasingly, collect from sources such as social media sites, the Web and third parties. Much of the interest in big data originates in marketing, which wants to learn as much about customers as possible. "Oracle DBAs, data architects -- these people stay on the market for about an hour until they’re hired," Kirven says. "People are looking for that person who can build a logical data map of their systems and aggregate relevant data so they can analyze and report on it." DBAs with experience moving pieces of the IT infrastructure to the cloud will be highly sought after, says Melland, noting that demand for cloud skills is up 32% from last year. To help kick off PrimeLending’s big data initiative, Elkins says he is seeking systems analysts, developers and DBAs to integrate data
from third parties, with the goal of easing the mortgage process. "Mortgages have been like a big black hole, with a lack of transparency and a lot of sitting and waiting," Elkins says. "Our focus in 2014 is to give consumers more control and an experience with mortgages that they've never had before."

7. Security Compliance/Governance

- 21% of respondents said that they plan to hire for this skill in the next 12 months.
- Last year’s ranking: No. 4

Security expertise seems to show up on every list of hot IT skills, and Melland says interest in cybersecurity will further drive demand, which is up 23% from last year. "It’s one of those skills that falls into a lot of job types, like network engineering, software development and database architecture," he says. Respondents to a recent Robert Half Technology survey said security jobs are among the most challenging to fill, in addition to application development and database management positions. With the increase in malware and cyberattacks, security has become a No. 1 priority for PrimeLending, which doubled its security staff this year, from four to eight people, Elkins says.

8. Business Intelligence/Analytics

- 18% of respondents said that they plan to hire for this skill in the next 12 months.
- Last year’s ranking: No. 5

With the volume of global data predicted to expand by a factor of 44 from 2009 to 2020 and reach 35.2 zettabytes, according to IDC, companies are eager to gain a competitive edge by developing sophisticated analytics capabilities. Although BI/analytics is still considered a specialty and therefore has fewer postings than other job categories on Dice.com, Melland says it's the third fastest-growing skill area on the website, and demand is up 100% from last year. Analytics expertise is scarce, ranking second among the most difficult skills to find in the Computerworld survey. Accordingly, these professionals command high salaries, often into the six figures, Melland says. At Wolverine, management’s demand for data-driven insights is growing, so Bland is looking for people with BI skills who are also familiar with the Plex Systems ERP application, which the company uses. "We would definitely like to get more information out of [our ERP] system, so someone with BI experience would be great," he says. "We'd like to provide more information in a more timely manner so the business can be more proactive." Hyatt, says Zoghlin, is similarly looking for people "who can make analytics usable and useful for customers and colleagues."

Reprinted courtesy of ComputerWorld.

Retrieved on January 4, 2014 from:
http://www.computerworld.com/s/article/9242548/8_hot_IT_skills_for_2014?taxonomyId=14&pageNumber=1
## Appendix G – Stakeholder Question List

### Discussion Questions

**Directions:** Please respond to those questions which address areas for which you have experience and insight. Do not feel obligated to respond to every question.

<table>
<thead>
<tr>
<th>Focal Area 1: Learning Objectives</th>
<th>CAO</th>
<th>CC</th>
<th>DEV/INS</th>
<th>LIB</th>
<th>CON</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How are the learning objectives for the AAS-PS program determined? (What sources such as employers, comparable programs in other institutions, professional associations, etc. are consulted when defining and updating program learning objectives?)</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>2. How are program learning objectives communicated to prospective students, current AAS-PS students, potential employers or other stakeholders?</td>
<td></td>
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<tr>
<td>3. How are individual course learning objectives developed, reviewed, and updated?</td>
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<tr>
<td>4. In what ways might the processes related to developing, communicating or revising AAS-PS program or course learning objectives be improved?</td>
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<tr>
<td>5. What other questions about Learning Objectives should be asked in the Self Study?</td>
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</tbody>
</table>

### Focal Area 2: Curriculum and Co-curriculum

<table>
<thead>
<tr>
<th>Focal Area 2: Curriculum and Co-curriculum</th>
<th>CAO</th>
<th>CC</th>
<th>DEV/INS</th>
<th>LIB</th>
<th>CON</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What processes are used to design or modify the AAS-PS curriculum to assure that the curriculum addresses program learning objectives?</td>
<td>X</td>
<td>X</td>
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<tr>
<td>2. Considering the unique nature of an all online teaching and learning environment, what are examples of “extra-curricular” activities that complement the curriculum: That are currently being used in the AAS-PS program?</td>
<td></td>
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<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>Question</td>
<td>Yes</td>
<td>No</td>
<td>Comment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
<td>-----</td>
<td>----</td>
<td>---------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>That could be integrated into a course or in the AAS-PS program in general?</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. How is the coherence (the logical, smooth transition of content and course expectations) of the program’s course sequences developed and effectively sustained (especially between a course and its prerequisites; or, between the AAS – PS program and the BPS program)?</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. What review processes are used to address whether the curriculum remains current, relevant, and of optimum quality?</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. In what ways could continued curriculum and co-curriculum improvement of the AAS-PS program be fostered?</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>6. What other questions about Curriculum and Co-curriculum should be asked in the Self Study?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Focal Area 3: Teaching and Learning Methods**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. In what ways do all faculty teaching in the AAS-PS program work collaboratively to improve teaching and learning, or is teaching primarily an individual responsibility?</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>2. What teaching with technology and related resources beyond the instructor’s personal knowledge and skill are available when selecting teaching practices?</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>3. In what ways is the Virtual Library used in courses in the AAS-PS program?</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>4. What teaching and learning support resources, which are provided by the RODP website, are especially helpful to you and your students? Why? (Feel welcome to give examples of effective use of a particular resource such as Technical Support, Online Databases, Virtual Career Center, etc.)</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>5. What would be most helpful to you in terms of online teaching and student learning to support continued improvement?</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>6. What other questions about Learning Objectives should be asked in the Self Study?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Focal Area 4: Student Learning Assessment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. How are Student Learning Assessments developed?</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. In what ways do the AAS-PS faculty work collaboratively to develop assessments that effectively address program learning objectives?</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. How effective are your assessments in measuring the degree to which your students are achieving program learning objectives?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Apart from traditional “tests”, in what ways do you effectively gauge student learning?</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. What data is available to you in terms of student assessment results?</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. How is assessment data used to improve the curriculum and/or teaching practices in the AAS-PS program?</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. What suggestions do you have to improve student assessment practices in the AAS-PS program?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. What other questions about Student Learning Assessment should be asked in the Self Study?</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Focal Area 5: Quality Assurance</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What processes are in place to provide feedback to AAS-PS program faculty regarding performance? How are these helpful?</td>
</tr>
<tr>
<td>2. In what professional development opportunities provided by the RODP and/or by your home campus have you participated and how effective have they been?</td>
</tr>
<tr>
<td>3. In addition to RODP-based marketing activities, what outreach efforts take place on your campus to inform prospective students about the AAS-PS program?</td>
</tr>
<tr>
<td>4. For your students who are in the AAS-PS program, how is academic advisement performed so that it appropriately and consistently contributes to student success?</td>
</tr>
</tbody>
</table>
5. In addition to RODP web-based orientation, how is student orientation to online learning conducted for new students to the AAS-PS program?

6. If asked to provide an instructor for a course in the AAS-PS program, what process do you follow to identify such an instructor?

7. In addition to RODP-based activities/resources, what activities or resources specific to your campus are available for online learners (including but not necessarily limited to AAS-PS students)?

8. What process do you follow to assess the quality of AAS-PS courses on your campus (for example, if a new elective in the program is proposed)?

9. What measures are used to assess the overall quality practices by the AAS-PS program (student satisfaction, completion rate, job placement, alumni survey, articulation, etc.)?

10. In general, how well do the services of the RODP central office staff assist your campus-based efforts in support of the AAS-PS program?

11. How is the RODP program governed and evaluated at your campus as a part of your campus mission and institutional effectiveness plan?

12. How effective has the online delivery system been and in what ways, if any, could it be improved?

13. What else would you like to see take place that would improve the quality of the AAS-PS program (including overall RODP services that support this program)?

14. What other questions about Quality Assurance should be asked in the Self Study?

| Question                                                                 | | | | | | | | | | | | | |
Appendix H - Student Survey Questionnaire

Students active in AAS-PS sections in the Fall 2013 semester were surveyed within their RODP course sections and asked to answer the following questions. Questions a-i were rated using the scale below and compiled quantitatively. Open-ended comments were captured using last question in this list. All data was collected online.

R = Responses | N/A = Not Applicable | SA = Strongly Agree | A = Agree | N = Neutral | D = Disagree | SD = Strongly Disagree

a. The purpose of each class is clearly presented in the course materials, discussions with the instructor, or by other means during the semester.
b. It is clear what to expect throughout the program from the information provided by the catalog course description, online program description, syllabi, and instructor feedback.
c. The prerequisite classes required for this program have helped me prepare for subsequent program classes.
d. The program provides suggestions or opportunities for out-of-class activities that have benefited my learning experience.
e. The materials and class activities offered in the program have been effective learning aids.
f. The program classes use effective technology teaching tools.
g. The tests, quizzes, papers, and other evaluation methods used in the program classes adequately measure what I have learned.
h. The online resources available through the RODP such as the Virtual Library, SmartThinking, etc. adequately support my learning needs in the program classes.
i. Advising and career planning needs are adequately provided by my home campus as well as RODP services.

Please provide additional comments about the program.
## Appendix I – IT Graduate Survey

Please circle the number corresponding to your response.

<table>
<thead>
<tr>
<th></th>
<th>Very Satisfied</th>
<th>Satisfied</th>
<th>Dissatisfied</th>
<th>Very Dissatisfied</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Overall, how satisfied are you with your ROCC/RODP education?</strong></td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>2. Based on the instruction you received in the program, how satisfied are you with your ability to perform the following tasks:</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use an integrated commercial software program to complete business applications in word processing, spreadsheet, presentation graphics, and database management.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Design a user-interface and forms to access a relational database file using an object-oriented programming language.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Solve problems by programming in an object-oriented language using standard programming constructs such as data types, assignment statements, use of subprograms, loops, conditional statements, arrays, records, and classes</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Solve programming problems using standard data structures such as lists, stacks, queues and trees.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Discuss network administration issues and recommend basic network troubleshooting solutions.</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Design and create web pages using web page editing/publishing software and edit graphic images and animations for web pages using image editing software</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Create and edit graphic images and animations for web pages using image editing software</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>
3. How satisfied are you with the factors listed below, only as they pertain specifically to the IT program?

<table>
<thead>
<tr>
<th>Factor</th>
<th>Very Satisfied</th>
<th>Satisfied</th>
<th>Dissatisfied</th>
<th>Very Dissatisfied</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty quality of instruction</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Faculty competence in major field</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Innovative methods of instruction</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Availability of faculty for assistance</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

4. How helpful were your educational experiences in the following?

<table>
<thead>
<tr>
<th>Experience</th>
<th>Very Helpful</th>
<th>Slightly Helpful</th>
<th>Not Helpful</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preparing for a new career in my chosen field or increasing my chances for a raise/promotion with your present employer</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Increasing knowledge in my professional field</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Improving teamwork skills</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Improving problem solving skills</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Increasing analytical/critical thinking skills</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Improving computer skills</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Improving research skills</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Improving technical skills</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Improving organizational skills</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Improving verbal communication skills</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Improving written communication skills</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

5. Which of the following do you use in your job?

<table>
<thead>
<tr>
<th>Languages</th>
<th>Circle all that apply.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C++</td>
<td></td>
</tr>
<tr>
<td>C#</td>
<td></td>
</tr>
<tr>
<td>Java</td>
<td></td>
</tr>
<tr>
<td>SQL</td>
<td></td>
</tr>
<tr>
<td>Visual Basic</td>
<td></td>
</tr>
<tr>
<td>Other (Please specify)</td>
<td></td>
</tr>
</tbody>
</table>

Please circle all that apply.
6. **What is your current job status?**

*Circle best response*

<table>
<thead>
<tr>
<th>Employed full-time or business owner</th>
<th>Employed part-time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unemployed by choice (skip to Q9)</td>
<td>Unemployed/looking for work (skip to Q9)</td>
</tr>
<tr>
<td>Continuing education (skip to Q9)</td>
<td></td>
</tr>
</tbody>
</table>

*Please circle the response that most closely matches your situation.*

7. **If employed, what is your job title**

*Who is your employer (optional)*

8. **How related is your present employment to your major program of study?** *(Circle the best response)*

<table>
<thead>
<tr>
<th>Closely related</th>
<th>Somewhat related</th>
<th>Not at all related</th>
</tr>
</thead>
</table>

9. **What would you consider to be the program's strengths?**
10. What are your suggestions for improving the program?

11. Please add any other comments you might have.

Thank you for your assistance!
Appendix J – List of TBR Community Colleges

Chattanooga State Technical Community College
4501 Amnicola Highway
Chattanooga, TN 37406
Telephone: 423-697-4400
Toll Free: 877-398-2545

Cleveland State Community College
3535 Adkisson Drive
Cleveland, TN 37312
Telephone: 423-472-7141
Toll Free: 800-604-2722

Columbia State Community College
1665 Hampshire Highway
Columbia, TN 38401
Telephone: 931-540-2722
Toll Free: 877-469-8720

Dyersburg State Community College
1510 Lake Road
Dyersburg, TN 38024
Telephone: 731-286-3200

Jackson State Community College
2046 North Parkway
Jackson, TN 38301
Telephone: 731-424-3520
Toll Free: 800-355-JSCC

Motlow State Community College
P.O. Box 8500
Lynchburg, TN 37352-8500
Telephone: 931-393-1500
Toll Free: 800-654-4877

Nashville State Technical Community College
120 White Bridge Road
Nashville, TN 37209
Telephone: 615-353-3333
Toll Free: 800-272-7363

Northeast State Technical Community College
2425 Highway 75
Blountville, TN 37617
Telephone: 423-323-3191
Toll Free: 800-836-7822

Pellissippi State Technical Community College
10915 Hardin Valley Road
Knoxville, TN 37933-0990
Telephone: 865-694-6400

Roane State Community College
276 Patton Lane
Harriman, TN 37748
Telephone: 865-354-3000
Toll Free: 800-343-9104, ext. 4523

Southwest Tennessee Community College
P.O. Box 780
Memphis, TN 38111-0780
Telephone: 902-342-STCC
Toll Free: 877-717-STCC

Volunteer State Community College
1480 Nashville Pike
Gallatin, TN 37066
Telephone: 615-452-8600

Walters State Community College
500 S. Davy Crockett Parkway
Morristown, TN 37813-6899
Telephone: 423-585-2600
Toll Free: 800-225-4770