Oklahoma City Community College

Program Review Self Study Year: 2012-2013

Division of Information Technology

Associate in Applied Science in Computer-Aided Technology (011)
Options: Computer-Aided Design
Digital Media Design
Geographic Information System
Computer Animation
Game Design
Certificate of Mastery in Digital Media Design (117)
Certificate of Mastery in Manufacturing/Architecture (084)
Certificate of Mastery in Geographic Information Systems (151)
Certificate of Mastery in Game Design (152)
Certificate of Mastery in Computer Animation (160)

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I. Introduction

This section should reference the general process of the review and any unique features of the review (such as the use of outside consultants or conducting the review in relation to an accreditation visit).

If the program has been reviewed previously, this section should include a brief summary of prior recommendations and how they were addressed.

Our program has completed two program reviews five years ago, the standard program review and one for ABET accreditation. Due to the financial burden that ABET accreditation was going to place on the program, we decided not to pursue the ABET accreditation. However, recommendations were suggested and changes were made to the program.

How recommendations were addressed in the standard program review?

a. Concerns and recommendations from the last standard program review

1. For the department to expand into other CAD disciplines (such as commercial

architecture, civil, GIS, and mapping) additional full-time or adjunct faculty with experience in these areas will need to be hired to develop the courses and teach them.

a. A full-time instructor was hired to focus on the Game Design/ Computer Animation and Digital Media options.

b. Dr. Todd Fagan was hired as an adjunct instructor. He developed the objectives and content for the GIS courses.

c. The geography program hired a full-time instructor to teach world geography. There was discussion about developing a geography program that would require GIS. The development of a geography program didn't come into fruition.

2. Our recent survey showed that recruitment was primarily a faculty responsibility. There is a lack of resources and time restriction in effectiveness in recruitment.

a. Doug Gregory, John Helton, and Gary Dominguez has visited local schools and given presentations on campus to visiting students. However, it is still limited and doesn't seem to be very effective.

3. The multimedia workroom (studio) has not been equipped with the necessary equipment for students to complete their projects to the level required in industry.

a. The department has purchased green screens, HD cameras, and some basic lights. Professional audio and video equipment are still needed.

4. Limited money for training and faculty development.

a. Travel money has increased over the years.

b. How recommendations were addressed in the ABET program review?

1. Graduate employee and objective assessment implementation

a. Currently, there is no contact with graduate employees. This is an activity the CAT program views of great importance. With the current workload restrictions and faculty expertise, contact with graduate employees has been given little or no attention. The program needs someone to research and identify the various groups and individuals. Contact might be accomplished through one or more of the following:

i. Extended or expanded services from Institutional Research.

ii. Additional personnel either at the program or division level trained and qualified to research and identify the various groups and individuals.

iii. External research groups contracted to research and identify the various groups and individuals.

2. Advisory Board participation is limited and infrequent

a. Advisory Board participation is still limited. Providing meals at advisory meetings, as the Technical Centers do, might increase attendance.

3. Course objectives and enabling objectives for lifelong learning and career development need to be expanded.

a. Lifelong learning and career development has not been a formal part of the CAT program.

i. A Life Long Learner survey was developed in 2011 and made a part of the outcomes assessment process. This is hosted on the CATBlog website.

ii. Life Long Learning is emphasized more in individual courses.

4. A graduate employee data collection system needs to be implemented.

a. No formal graduate employee system exists. This might be done though one or more of the following:

i. Extended or expanded services from Institutional Research.

ii. Additional personal either at the program or division level trained and qualified to research and identify the various groups and individuals.

iii. External research groups contracted to research and identify the various groups and individuals.

b. An informal on-line graduate survey was developed by the CAT faculty. This is hosted on the CATBlog website.

II. Executive Summary

The Executive Summary will include the program's connection to the institution's mission, program objectives, and the strengths and areas for improvement of the program. It will also include the key findings and recommendations of the internal or external reviews with regard to the Program Review Principles and Program Review Criteria.

The Computer-Aided Technology program fit well with the college's mission of providing education and training leading directly to employment in the field. Those students that are not seeking a degree and students with professional degrees are able to achieve their educational goals by taking courses as needed for their continuing education.

The Computer-Aided Technology Program (CAT) has grown from a program to program with five options. With the addition of a new faculty position to oversee three of the options, the CAT program has seen major growth in those area.

The Computer-Aided Technology Program has a strong history of successful graduates, many of whom have continued their education to become engineers, architects, interior designers, graphic designers, and technology center instructors.

Program strengths include an experienced and knowledgeable faculty; a curriculum that keeps pace with current trends and technology currently used in the profession; state of the art facilities; flexible scheduling; and strong connections with technology centers through the cooperative alliance program. Graduates have provided valuable feedback by completing exit interviews during their capstone course and by becoming part of the advisory committee.

Program evaluation is an ongoing process that examines data and feedback from multiple sources including advisory board members, exit interviews, employer feedback and current students. However, getting the data is a struggle because there is no system in place to consistently get data from employers and alumni.

The overall enrollment in the program is steady. However, the enrollment in individual options has fluctuated with the economy. Recruitment efforts will need to be stepped up to compensate for this fluctuation.

Projected Goals:

- Continue recruitment and advisement opportunities.
- Develop recruitment efforts to educate potential students about careers in Computer-Aided Technology.
- Work with Dean Ashby and Professor Shaw to improve the AV Studio.
- Increase visibility within the college and the community.
- Work with technology centers and the cooperative alliance department to increase graduates and promote the importance of the degree completion.
- Work with the institution to develop a system to systematically track alumni and employers.

III. Analysis & Assessment

This section will include a complete review and analysis of the Program Review Criteria based on the internal or external team's review. It will also assess developments since the last program review in the context of the current recommendations of the internal review and any recommendations.

A. Centrality of the Program to the Institution's Mission

An assessment and written analysis as to the centrality of the program to the institution's mission and in the context of the institution's academic plan are required. The purpose of the mission of an institution is to indicate the direction in which the institution is going now and in the future. The mission defines the fundamental reason for the existence of the institution.

Together with the planning principles and goal statements, the mission reveals the philosophical stance of the institution with respect to education and learning while at the same time providing a framework for the maintenance of institutional integrity and development.

Describe how the program is central to the institution's mission:

The Computer-Aided Technology program at OCCC provides high quality education to students that wish to join the work force after the completion of an AAS degree or certificate of mastery. The program has produced 69 graduates with Associates in Applied Science degrees and 52 graduates with a certificate of mastery over the past five year period.

Student Success: Our students achieve their individual educational aspirations.

Graduate Success: Our graduates succeed at four-year institutions and/or in their careers.

B. Vitality of the Program

Vitality of the program refers to the activities and arrangements for insuring its continuing effectiveness and efficiency. To maintain its vitality and relevance, a program must plan for the continuous evaluation of its goals, clientele served, educational experiences offered, educational methods employed, including the effective incorporation of technology, and the use of its resources. This vital principle or force can best be observed by examining the past and present initiatives to insure the vitality of the faculty, students, and program.

1. List Program Objectives and Goals

CAT Mission Statement:

The Computer-Aided Technology Program will provide the State of Oklahoma with professionals using application software in traditional and non-traditional technologies such as engineering and architectural design, web site design, animation, and game design.

Students graduating from the CAT Department at Oklahoma City Community College will:

1. Be able to continue to learn and to adapt in a world of constantly changing technology.

2. Be prepared for an entry level position in their field of study.

3. Use the latest equipment and software used in industry.

2. Quality Indicators

Quality indicators may vary by institutional mission; however, institutions should measure the efforts and quality of their programs by: faculty quality, ability of students, achievements of graduates of the program, curriculum, library, access to information technology resources including efficiencies and improved learner outcomes through appropriate use of this technology and appropriate use of instructional technology to achieve educational objectives, special services provided to the students and/or community, and other critical services.

As appropriate, institutions should evaluate the program against industry or professional standards utilizing internal or external review processes. Institutions must provide specific documentation of student achievement. Such documentation should include programs outcomes assessment data consistent with the State Regents' *Assessment Policy*. Program quality may also be reflected by its regional or national reputation, faculty qualifications, and the documented achievements of the graduates of the programs. This includes a program self review that provides evidence of student learning and teaching effectiveness that demonstrates it is fulfilling its educational mission and how it relates to Higher Learning Commission Criteria and Components listed below:

a. The program's goals for student learning outcomes are clearly stated for each educational program and make effective assessment possible. List of the student learning outcomes.

Students graduating from the CAT Department at Oklahoma City Community College will be able to:

1. Use a computer graphic system to develop a solution to an industry specific problem.

2. Use a computer graphic system to create industry specific 2-D drawings.

3. Use a computer graphic system to create raster and vector graphics.

4. Use a computer graphic system to integrate graphics and data from multiple sources.

5. Use the concepts, techniques and skills of 3D Modeling and analysis.

6. Use the concepts, techniques and skills of computer programming and scripting.

The following outcome applies to students in the CAD Option.

7. Apply basic physics and mathematical techniques to analyze coplanar force systems, calculate moments of inertia, compare stresses in structural and mechanical systems, and apply basic properties of materials in the selection of structural members.

Well defined the criteria for measurement and how the criteria were used in the program.

The Computer-Aided Technology program uses several methods of measuring the success of the program and student success. Each learner outcome or program outcome is measured at least twice in a five year period. The criteria used for each outcome is decided on by faculty and used as a baseline for improving the program.

For the 1000 level courses, rubrics are created for measuring learner success for that outcome. Rubrics are also used for the 2000 level courses in addition to surveys to measure the program success.

The evaluation, results, and recommendations based on the criteria used.

Each year the CAT Program uses the outcomes assessment data to improve the quality of the program. Based on recommendations, listed below are some of the modifications made to specific courses, facility or a degree option.

2008

- It was determined that Physics I (Phys 1114), College algebra (Math 1513) & Trigonometry (Math 1613) were preparing students for CAT 2023 Design Mechanics. However, students needed more exposure on Truss Analysis. A modification was made in the course so

students spent more time on the subject.

- New Computers and an external 2TB hard drive were purchases to accommodate the demands of the new Game Design Option.

2009

- It was determined that students in Multimedia (CS 1363) didn't have the skills set coming into the course to construct design mock-ups and story boards utilizing proper design principles. This activity was removed from the course and moved to other advanced courses.

- In Design Project (CAT 1214) students had to deliver a presentation using PowerPoint. Students could create a basic power point but had difficulty embedding CAD graphics and video into their presentation. Starting the fall of 2009, students were giving a lesson how to use PowerPoint effectively and how to embed the graphics and video.

- The CAD Option was teaching Autodesk Inventor and Autodesk Revit yearly and the student computer staff were not familiar the two programs. The CAD faculty started holding WOW sessions to get the staff up to date. Copies of the class material were also given to the staff to work on when the computer center was slow.

2010

- Some students enrolled in courses that worked in a 3D environment had difficulty creating 2D representations for their 3D models. Working drawings are two-dimensional and must use proper line weight and line convention. Instructors spent more time and focus setting up the 2D printed documents.

- For students to be well prepared for entry level positions in their field of study, advisory board members evaluate student projects in their capstone course (CAT 2924). However, some of the students did not have their material ready for their review. We now require that all work, including the PowerPoint be submitted on the 13th week for faculty review. To build student confidence in speaking in front of an audience, it was recommended that student be given more opportunities for presentations.

2011

- Some students in Applications in CAD (CAT 2543) using Revit Architecture were having a difficult time completing their projects. We identified several areas ways the department could improve the success of the students. Current computers with 4GB of RAM made the software run really slow, so new computers with 12GB of RAM and more processor was purchased. A supplemental instructor was added to help students in the course. James Jackson (one of the student computer center assistant) has worked through the course materials. Autodesk now allow students to download a three year license of the software, so student have the ability to work at home if they have a computer capable of running the software.

- One of our program objectives is for graduates to continue to learn and to adapt in a world of constantly evolving technology. We want students to know that Life Long learning is essential to continually to be successful. We surveyed students in 2000 level courses. The data shows that we are emphasizing the importance of Life Long Learning. The trend needs to continue with an emphasis on student being proactive on expanding their knowledge without it being a class assignment.

2012

- Assignments in CAT 1214 are step-by-step and some students are not learning how to apply the techniques to other problems. There are extra-credit assignments that are not step-by-step. Only about 25% of the students do the extra credit assignment. To improve the student's critical thinking, the extra credit drawings should be a requirement.

General Education requirements represent just over sixty percent of each Associate of Science or Associate of Arts degree, making the careful assessment of these broad competencies OCCC considers essential for all graduates very important.

Strategy:

The General Education Committee will create six interdisciplinary teams with members from multiple divisions. Each team will consist of five members with two members specifically teaching in one of the General Education Core Areas. Also, at least one team member will be a representative of the General Education Committee.

Twice a year these teams will evaluate one hundred artifacts from students having attained at least 36 hours of General Education Courses from OCCC. Reports, recommendations, and actions created from the General Education Assessment Process will be stored on the General Education Committee Website.

Evidence should be presented that shows a systematic review of the curriculum is conducted regularly. This review should indicate how the general education competencies are being met:

General Education Assessment Plan

Objective:

To assess and recommend actions for the general education component of Oklahoma City Community College's curriculum.

Method:

Developed rubrics will provide common criteria for assessing “artifacts” gathered from various courses. Artifacts may include but are not limited to recorded performances, PowerPoint Presentations, essays, lab reports, research projects, service-learning projects, or any assignment preexisting in a faculty's course.

Nevertheless, the underlying principle of this method is (1) to reduce the intrusive nature of assessment within faculty courses, (2) to create a real environment of student performances within a classroom setting instead of a contrived environment of a forced examination (i.e. CAAP exams not counting for a classroom grade), and (3) to collect artifacts already designed and administrated by our professional faculty at OCCC.

Data Collection:

The Office of Institutional Effectiveness will identify each semester students completing at least 36 credit hours in General Education Courses.

The General Education Core

General Education at Oklahoma City Community College is an integral component of each student's experience. Every student receiving an Associate Degree (AAS, AA, or AS) must complete at least one course from each of the following areas, indicating a general understanding of that area.

I. Human Heritage, Culture, Values
II. Public Speaking
III. Writing
IV. Social Institutions
V. Mathematical Methods
VI. Scientific Methodology

Program Response to General Education Assessment Data

Provide Evidence that shows a systematic review of the curriculum is conducted regularly. This review should indicate how the general education competencies are being met.

The development of the curriculum is influenced by recommendations of the advisory boards, faculty experience in the field of study, trends in industry and changes within in the application software.

The program has three separate advisory boards, one for CAD, one for GIS and one for Game Design/Digital Media and Animation. Our goal is for one of the advisory boards to meet to each year. While the CAD program was going through ABET Accreditation, changes were made to the CAD curriculum and the program to meet their standards. Because of the creation of the Game Design and animation option, there has been several revisions and modification to the options based on recommendations of the advisory board. The program has gone through curriculum changes in 2006, 2008 and 2011.

All of the options in the CAT program have at least 18 hours of general education courses. The

program also supports general education assessment by providing artifacts to the general education committee. This includes videotaped presentations during Capstone presentations, research papers, sample test questions, sample assignments and article reviews.

In a recent survey of the twenty-five major courses, instructors were asked to indicate which general education objectives were incorporated into the curriculum. These are the finding; 16 courses incorporate public speaking, 10 courses have writing assignments, 10 courses use mathematical methods and 15 courses include critical thinking.

In FY 2012, Computer-Aided Technology majors generated 962 credit hours of general education hours.

b. The program values and supports effective teaching.

Faculty Performance Review and Evaluation

Faculty will be evaluated on the basis of the established standards of performance and objectives established in the person's contract and any subsequent memorandums of agreement established for the position/person. Faculty are defined as employees who primarily perform teaching and instruction-related duties and who are employed on the basis of a written contract setting forth the duties to be performed and the compensation to be paid. The performance appraisal for each faculty member will be conducted by the Division Dean or Director as appropriate.

Course and Faculty Evaluation

The Student Input on Instruction process is a means of gathering student perceptions of instruction at the college. The results are intended to be used by faculty as means of identifying ways to improve instruction. A copy of the questionnaire may be found in the appendix of this document. Up to three (3) questions, unique to the course or section, may be created for inclusion as optional questions. The forms and supportive instructions will be available to students online during the 8th, 9th, or 10th week of 16-week courses or the 5th or 6th week of eight-week courses.

c. The program creates effective learning environment.

In addition to classroom learning, the CAT program has tutors and supplemental instructor available to students. The students also have access to labs and lab assistants. The CAT program has over 5,000 square feet of learning space that includes the following:

The Student Computer Center (4,000 sq. ft.) is located on the 3rd floor of the Library. The Student Computer Center is open to all students during the fall, spring and summer Semesters from 7:30 a.m. to 10:45 p.m. Monday through Friday and Saturday 8:00 a.m. to 4:45 p.m. The Center is open in the weeks between the semesters but on a reduced schedule.

The SCC has 120 computers with the following specifications.

- Dell Precision T7500
- Dual six core Xeon Processor with 12 GB RAM
- Two 1TB Hard Drives
- Nivida graphic cards with 2GB Ram
- 24" LCD monitors.

Twenty-one of the computers are reserved for students in the Computer-Aided Technology program. All software necessary to support the courses are installed on these computers.

The Students have access to a number of printers and plotters. These include:

- HP Designjet T1120 44” wide plotter with 44” wide scanner
- Cannon IPF8300 44” wide plotter
- Nextengin desktop 3D scanner

· Two HP 8150 LaserJet (B&W) for plotting up to 11x17 sheets.

· HP Designjet CP4520 color laser printer.

· Several HP Designjet lasers printers

The AV Studio is located on the 3rd floor of the library. The 190 square foot room is equipped with a green screen and computer equipment used for editing audio and video. The A/V equipment is out of date and is in need of replacing.

The metrology lab room is located on the 3rd floor of the library. The 150 square foot room is equipped with a Zcorp 450 3D printer and metrology workbench.

The following equipment has been purchased for the metrology lab from internal grant funds.

12" Transfer Stand, Bench Center - 15" center, Depth gages, Digital Caliper, Digital/Mechanical Micrometer Drill gage (1/16 to 1/2), Drill gage (A to Z) , Electronic Digital (Dial) Indicator, Electronic Digital Micrometer, Gage block set grade B (81 pieces), Height gages, Inspection Block Levels - 8" -Sensitivity per 10" inch, Inspection Sine Bars 1 x 10-3/4 x 1", Magnetic Base/Indicator Holder Pin gages (.25 in - .50 in) in .001, Portable Hardness Tester, Pro 3600 Digital Protractor, Radius gage, Screw Pitch gage, Sets With Horizontal Type Indicators, Small Hole gages, Steel Table Workbench/Storage, Student Tool set (inch) with case, Student Tool set (Millimeter) with case*, Surface Plate (tool grade B) 24X24, Telescoping Gage set, Test Block Kit - Hardness: 30-90, Test Indicators - Horizontal Type, Universal Bevel Protractor with Dial & Mike Readings, V-Blocks and Clamps.

The Game Research Lab is located on the 3rd floor of the library. The 150 square foot room is equipped with big screen TV, two Xbox 360, a Wii and over 40 games for the consoles.

The GPS\Surveying Equipment is located in a locked storage cabinet in room 201. The following equipment was purchased in 2007 through an internal grant. The equipment includes a Nikon Total Station, 18 handheld Trimble GPS units, 2 TDS Recon Data Collectors and various tools used in Surveying and GIS.

Classroom 201 and 206 are reserved for the CAT program. Each room is approximately 1,300 sq. ft. Both equipped with an HD projection system and AV equipment.

Each class room has 21 computers. Each computer has the following specification:

· Dell Precision T7500

· Dual six core Xeon Processor with 12 GB RAM

· Two 1TB Hard Drives

· Nivida graphic cards with 2GB Ram

· 24" LCD monitors

The CAT program has access to **industry standard software** which includes:

· Autodesk Entertainment Suite (40 seats)

· Autodesk Design Suite (40 seats)

· ArcGIS (62 seats)

· Adobe Creative Suite (25 consecutive licenses)

· Zbrush (21 seats)

d.The program's learning resources support student learning and effective teaching.

The majority of the needs of CAT students are met through usage of free Internet materials, such as asset pictures, plus video clips, etc. for use in projects. Both students and faculty rely heavily on the Internet for materials and information. It was pointed out that the library has some difficulty maintaining a current book collection because new versions of programs come out every year. Professors often use the collection with students in a serendipitous way. Since most classrooms are on the floor with the Library's circulating collection, professors take students to the shelves to show them the resources available at the library.

Another request made to the Liaison was a reminder to put textbooks on reserve. This is now an action taken by the Liaison. Active communication between the Library Liaison and the faculty would further facilitate the services provided by the Library.

Library Print and Online Resources

The Library's array of resources --both online and in other formats --continues to grow and evolve. All of the online resources are available to students-- anytime, anyplace. The Library has about 113,000 items --including books, ebooks, DVDs, videos and online films.

The Library continues to subscribe to a wide variety of excellent online article databases such as EbscoHost, as well as many print periodicals. With student and faculty preference for online resources, use of print periodicals has dropped notably and the librarians anticipate cancelling print subscriptions that are duplicated in our electronic resources in coming years.

For the past several years the Library has provided access to *Films on Demand*, an online streaming video service, via the Library website. *FoD* is multi-disciplinary. Its thousands of complete films, as well as convenient short clips, are searchable by discipline, topic and title. Feedback has been positive and integration into the online learning platform appears to be working. CAT faculty were made aware of Films on Demand and how it could be used in the classes. The Liaison did a few searches in many different classes, demonstrating what is available and that most films are closed captioned. The Liaison received positive response from the professors.

The Library continues to improve the regular book collection, while adding options --a new ebook service, Overdrive, primarily for leisure reading, and in fall 2012 EbscoHost's Community College eBook Collection, 40,000+ titles covering many different academic programs and topic areas. On a regular basis old and ragged materials are weeded.

Because the Library budget for materials acquisitions continues to be good, librarians are usually able to accommodate faculty requests for purchase.

Library Instructional Resources

The value of excellent research collections, whether online or in print, depends also on whether or not students are aware of and have the skills to use them. Experience shows that typical students are not aware of resources available, but instead are “looking around on the Internet” with often very limited success.

Many students enroll in the one credit hour Success in College and Life course, in which they receive instruction in doing academic research. Sessions are usually hands on, held either in the Library's instruction area or in the students' regular classroom, but flexibility is key. And as always, librarians staffing the Library Assistance desk answer informal student questions and provide one-on-one instruction. The CAT program expects their students to have had library instruction either in

their English Composition classes or the aforementioned Success in College and Life course.

In sum…

Overall, the Library has 76 computers for student research, online coursework, etc. More than half of these are set up with DVD players and headphones. The building now has wireless access throughout. From the Library's web page students both on- and off-campus can use the catalog of books and DVD/videos, search for quality information in many online article databases, link to tutorials and make online requests.

Librarians are committed to supplying the right resources and helping students and faculty use them well. The Library has a strong budget and responds to faculty requests or suggestions about useful resources. Neither is expected to change.

e. The institution's curricular evaluation involves alumni, employers, and other external constituents who understand the relationship among the course of study, the currency of the curriculum, and the utility of the knowledge and skills gained.

OCCC has established specific curriculum patterns for transfer programs leading to the Associate in Arts (A.A.) or Associate in Science (A.S.) degrees. Describe program coordination efforts, partnerships and relationships with transfer institutions.

N/A

f. The organization learns from the constituencies it serves and analyzes its capacity to serve their needs and expectations.

The Computer-Aided Technology Department has added new options, modified existing options based on recommendations of the advisory boards.

The Computer-Aided Technology Department has provided a flexible scheduling of courses based on the need of the students. The weak economy has forced many students to want classes on two or three days a week. We try to develop a schedule so that students don't have to drive to campus four or five days a week.

3. Minimum Productivity Indicators

The following are considered to be the minimum standards for degree program productivity (averaged over five years). Programs not meeting these standards may be identified for early review as low producing programs. Institutions will be notified of programs not meeting either one of the two standards listed below and other quantifiable measures in this section.

a. Number of degrees conferred (averaged over five years, minimum standard: AA/AS/AAS 5)

Associate in Applied Science - 13.8

Certificate of Mastery - 10.4

b. Number of majors enrolled (averaged over five years,minimum standard: AA/AS-25 AAS-17)

Associate in Applied Science
Computer Aided Design - 119.6*
Digital Media Design - 31.6
Geographic Info. Systems - 7.8
Computer Animation - 7
Game Design - 61.4

*There are 126 majors enrolled during the Fall 2012 Semester. Eighty-eight students enrolled in the technology centers, which means 38 majors in Computer-Aided Design. This number is very low. This has the advisory board and faculty concerned about the program.

4. Other Quantitative Measures

a. The number of courses taught exclusively for the major program for each of the last five years and the size of classes for each program level listed below:

1000 Level Courses

Year	# Classes	Avg. Size
FY 2008	19	15.8
FY 2009	26	14.2
FY 2010	26	15.7
FY 2011	27	15.8
FY 2012	29	11.4

2000 Level Courses

Year	# Classes	Avg. Size
FY 2008	21	10.7
FY 2009	25	7.5
FY 2010	25	8.6
FY 2011	30	6.5
FY 2012	27	7.2

b. Student credit hours by level generated in all major courses that make up the degree program for five years.

1000 Level Courses

Years	Hours Generated
FY 2008	1,004
FY 2009	1,257
FY 2010	1,347
FY 2011	1,419
FY 2012	1,061

2000 Level Courses

Years	Hours Generated
FY 2008	689
FY 2009	582
FY 2010	658
FY 2011	606
FY 2012	603

c. Direct instructional cost for the program for the review period.

Oklahoma City Community College (OCCC) offers online courses (computer based/Internet) which allow students the freedom from attending regularly scheduled course meeting times while still earning college credit. Online courses are similar to traditional, on campus courses in that they have a regular class schedule, assignment due dates, and the expectation of student interaction. OCCC has committed resources for the creation of specialized resources for online students with the goal of increasing student success. These resources include a customized section of the OCCC website to assist them as they progress in their academic studies via distance and an orientation to the College's Learning Management System. We also provide virtual tutoring in the Math and Communication labs in addition to 24-7 tutor support through GradeResults to further customize and personalize online students' education. The cost of these initiatives and efforts totals $55,000.00. The cost of 24-7 technology support for student and faculty support those working within the learning management system is $65,000.00.

Technology use in the classroom continues to expand to meet the needs of our students. 150 of our classrooms are equipped with permanent multimedia equipment with the availability of mobile carts to increase the number of high tech classrooms to 100%. The cost incurred with this multiyear effort was $1.22 Million. Faculty members are continuing to utilize student response systems, SmartBoards, slates and are implementing the use of IPads within the classroom. OCCC continues to support the utilization of technology in the classroom so faculty can continue to engage students. The use of IPads in the classroom is a new effort on campus and the cost thus far has only been $50,000.00. The Center for Learning and Teaching offers multiple learning opportunities for faculty related to strategies for incorporating technology into instruction effectively as well as the use of the College's Learning Management System, Moodlerooms. The CLT team has strategically worked to meet the needs of our 157 full-time faculty as well as the 500 adjunct faculty members. They support them through organized workshops, online training modules, and individual faculty consultations conducted via phone, Skype, email, or in person. The consultations focus on the use of the college's LMS as well as the choosing of instructional technology to match learning objectives

d. The number of credits and credit hours generated in the degree program that support the general education component and other major programs including certificates.

Option	Degree	Gen Ed.	Generated
Computer Aided Design	AAS	105	321
Digital Media Design	AAS	12	36
Geographic Info. Systems	AAS	12	36
Computer Animation	AAS	14	42
Game Design	AAS	96	288

e. A roster of faculty members including the number of full-time equivalent faculty in the specialized courses within the curriculum.

Full-Time OCCC Faculty
Douglas Gregory
John Helton
Akram-Taghavi-Burris (former) / Justin Shaw (Current)

Adjunct OCCC Faculty
Gary Dominguez (current)
Todd Fagin (current)
Matthew Bell (current)
Sandy Troung (former)
Christopher Burris (former)
Hobi Haque (former)
Jeffrey Price (former)

Technology Center Instructor
Jeremiah Cook (current)
Linda Lancaster (current)
David Lee (current)
Bruce Yancey (former) / John Means (current)
Christopher Burris (former) / Erin Richardson (current)

f. If available, information about employment or advanced studies of graduates of the program over the past five years.

Data not available.

g. If available, information about the success of students from this program who have transferred to another institution.

Data not available.

5. Duplication and Demand

a. Demand from students, taking into account the profiles of applicants, enrollment, completion data, and occupational data.

The Computer-Aided Technology program has expanded from a single option to five options. These options were added because of demands from students and advisory boards.

The GIS option (2008) was created because we were encouraged to think outside the box and expand our program. A group GIS professionals & others formed a planning committee to develop the GIS curriculum. We received an $80,000 internal grant to purchase the equipment for the option.

The Game Design (2007) and Computer Animation (2011) options were created by recommendation of the digital media advisory board because there was a lot of interest in these options.

In the past five years, 69 students graduated with an AAS degree and 52 students graduated with a certificate of mastery. Yearly average of 13.8 and 10.4.

The five year average of declared majors is 247 students.

From the latest data provided by Economic Modeling Specialist Intl (EMSI) we divided the data into three categories; Current Demands, Future Demands and Remedial Demands.

Current demands refer to the estimated number of jobs that students could move into after graduation. The EMSI data show there are 226 more jobs in 2012 than 2011.

Future demands refer to the estimated number of jobs that students could move into after obtaining a bachelor's degree. The EMSI data show there are 365 more jobs in 2012 than in 2011.

Remedial demands refer to the estimated number of positions or people that could need continuing education or remedial training. The EMSI data show there are 827 more positions in 2012 than 2011.

b. Demand for students produced by the program, taking into account employer demands, demands for skills of graduates, and job placement data.

The graduate survey data provides little information on job placement. However, 88.75% of graduates surveyed indicated that they met their educational goals at OCCC and 100% would recommend OCCC to another person. The survey indicated that 55.15% of students that completed the survey were employed full-time, 22.70% was employed part-time and 28.95% were unemployed but seeking employment.

Since 2009, 20 companies have contacted the CAT department directly looking for CAD & GIS students. Many of these companies contact us multiple times a year when employees are needed. Professor Helton sends these requests out on a listserv where there are over 300 current students and alumni.

Job placement data is not tracked by the Computer-Aided Technology Department and no data were given to us for this program review.

c. Demand for services or intellectual property of the program, including demands in the form of grants, contracts, or consulting.

The Faculty and Staff have been asked numerous times by Professional Development Institute to teach a professional training course. Faculty has been asked to serve as content expert

evaluators at local colleges and technology centers.

d. Indirect demands in the form of faculty and student contributions to the cultural life and well-being of the community.

The faculty, staff, students and alumni has contributed to the cultural life and wellbeing of the community in several different ways.

- Volunteered at the Oklahoma Regional Food Bank, Feed the Children, Habitat for Humanity, OCCC Arts Festival, OCCC Game Expo and many others.
- The CAD club has raised money for local charity.
- Faculty have given presentations at various schools on career days.
- Faculty have donated services to non-profit organizations.
- Faculty and students have served as judges for skills USA contest for local high schools and technology centers.
- Faculty participate in GIS Day at the Capitol, at services on the GIS council, and as members of SCAUG.

The graduate survey indicated that 15% of graduates have volunteered in the community.

e. The process of program review should address meeting demands through alternative forms of delivery.

The CAT Program hasn't perused delivering courses online except for CAT 1043- Engineering Principles and CAT 1214 Computer-Aided Design. Computer-Aided Design will be offered online for the first time in the spring 2013 semester. Other than CAT 1043 and CAT 1214, there is only one class that has multiple sections offered during the semester. Forcing students to take an online course because it's the only section offered is not recommended by the advisory board.

6. Effective Use of Resources

The resources used for a program determine, in part, the quality of the educational experiences offered and program outcomes. Resources include financial support (state funds, grants and contracts, private funds, student financial aid); library collections; facilities including laboratory and computer equipment; support services; appropriate use of technology in the instructional design and delivery processes; and the human resources of faculty and staff. The efficiency of resources may be measured by cost per student credit hour; faculty/student ratio; and other measures as appropriate. The effective use of resources should be a major concern in evaluating programs. The resources allocated to the program should reflect the program's priority consistent with the institution's mission statement and academic plan.

The CAT department shares it classrooms with the computer science department and the Professional Development Institute. In addition, our classrooms are available to other areas on campus by request.

We purchase network version of software so that it can be shared in classrooms and in the student support center. Instead of buying 80-100 seats of the software, we can purchase 40 seats and arrange our class schedules to share the software.

Many of our instructors use Moodle to complement their classes, which in turn reduces the amount

of printed documents needed for the classes.

Because our program requires high end computers, they tend to cost more than the average computer on campus. Computers are replaced approximately every three years. However, they are reallocated to other classes with our division and the college. They are used well beyond their life-cycle in our program. Many of these computers are used at least six years on campus.

IV. Program Review Recommendations

This section is a description of recommendations that have been made as a result of the review and of actions that are planned to implement these recommendations. Recommendations should be clearly linked and supported by the information and analyses that were articulated in the previous sections and should contain a realistic strategy for implementation of any changes.

A. Describe the strengths of the program identified through this review.

- Outstanding facility. Adequate space for current programs and students.
- Flexible scheduling of courses.
- Small class sizes.
- Adequate hardware with the exception of the AV Studio.
- The program is well supported by the college at all levels.
- Experienced and dedicated program faculty. Doug Gregory has 38 years of experience teaching CAD and Mechanical Design. John Helton has 22 years of experience teaching CAD and Architecture Design. In August, Justin Shaw was hired to teach Game Design, Computer Animation and Digital Media. He has two years of experience adjunct teaching at Oklahoma Christian and three years in the Game Design industry.
- Cooperative Alliance with the Technology Centers. In the Fall of 2012, there are 88 students enrolled for college credit at Technology Centers.

B. Describe the concerns regarding the program that have been identified through this review.

- The number of students in some options have decreased while others have increased.
- Lack of exposure and promotion of the program.
- Outdated equipment in the AV Studio.
- Lack of alumni tracking, job placement data and contact with alumni
- Inconsistency of regular advisory board meeting.
- Cooperative Alliance with the technology Centers is a great asset of the CAD Option.

However, many of the students are not getting their certificate of mastery or coming to OCCC to obtain their associate degree.

C. Develop a list of recommendations for action that addresses each of the identified concerns and identify planned actions to implement recommendations.

The numbers of students in some options have decreased while others have increased.

- Improve recruitment efforts and advising.
- Update all program brochures and mail out to high school counselors.

- Increase the number of high school visits and on campus visits.
- Meet with student advisors more frequently and keep them abreast of the change in the field and program.

Lack of exposure and promotion of the program.

- Promote the program on local media such as television and newspapers like other college do on a regular basis.

Outdated equipment in the AV Studio.

- Work with Dean Ashby and the new digital media professor to update the equipment. As budget allows, update the equipment, and furniture to studio quality.

Lack of alumni tracking, job placement data, and contact with alumni.

- We need to be able to contact and track alumni years after they graduate. There doesn't seem to be a system in place to contact graduates other than the graduate survey which is a one-time effort.
- Professor Helton does maintain a listserv to student are encouraged to join. This is limited to the students that join, it doesn't include all students.
- A college wide system could be developed for Alumni and Employers.

Inconsistency of regular advisory board meeting.

- Starting the fall 2012, two advisory board meeting will be scheduled. One in early November and another in early April.

Cooperative Alliance with the Technology Centers is a great asset of the CAD option. However, many of the students are not getting their certificate of mastery or coming to OCCC to obtain their associate degree.

- Work with the director of Cooperative Alliance and verify students' academic history to see who has enough hours to graduate and complete the paperwork for graduation.
- Continue to visit technology center and encourage student to get their certificate of mastery and consider obtaining the associate degree.

D. Provide institutional recommendations as the result of the program review and planned actions to implement recommendations.

Appendix

Program Curriculum

Program Requirements

Minimum Required Hours 64

Major Courses		
Prefix & Number	Course Title	Credit Hours
CAT 1013	Creativity and Design (CA, DM, GD)	
CAT 1023	Evolution of Game Technology (GD)	
CAT 1033	Principles of Animation (CA)	
CAT 1043	Engineering Principles (CAD)	
CAT 1053	Manufacturing Materials and Processes (CAD)	
CAT 1214	Computer-Aided Design (CAD, DM, GD, GIS)	
CAT 1223	Game Development and Design Concepts (GD)	
CAT 1233	2D Computer Animation (CA)	
CAT 1253	CAD 3D Modeling (CAD)	
CAT 1313	Introduction to Geographic Information System (GIS)	
CAT 1323	Introduction to Global Positioning Systems (GIS)	
CAT 1513	Digital Imaging (CA, DM, GD)	
CAT 2023	Design Mechanics (CAD)	
CAT 2143	Digital Video Editing (CA, DM)	
CAT 2163	CAD Programming and Automation (CAD)	
CAT 2223	Game Level Design (GD)	
CAT 2313	Introduction to Spatial Analysis (GIS)	
CAT 2334	Plane Surveying (GIS)	
CAT 2533	3D Rendering and Design Visualization (CA, DM, GD)	
CAT 2540	Applications in CAD (CAD)	
CAT 2633	3D Animation and Special Effects (CA, DM)	
CAT 2703	Practicum (CAD)	
CAT 2733	3D Character Design and Animation (CA, GD)	
CAT 2924	Design Project (CA, CAD, DM, GD, GIS)	
CS 1103	Introduction to Computers and Applications (GIS)	
CS 1143	Beginning Programming (GIS)	
CS 1333	Database Management Applications (GIS)	
CS 1363	Digital Media Design (CA, DM, GD)	
CS 2433	Digital Media Scripting (CA, DM, GD)	
GCOM 1053	Electronic Publishing: Indesign I (DM)	
GCOM 1183	Computer Drawing: Illustrator (DM)	
	Computer Animation-34 hours Digital Media Design-34-35 hours	
	Computer-Aided Design -32 hours	
	Game-Design-35 hours Geographic Information System-30 hours	

General Education Courses		
Prefix & Number	Course Title	Credit Hours
ENGL 1113	English Composition I (GIS, GD, DM, CAD, CA)	
ENGL 2000	Creative Writing (CA, DM, GD, GIS)	
	OSRHE Approved Gen Ed Communication Course (CAD, GIS)	
POLSC 1113	American Federal Government (GIS, GD, DM, CAD, CA)	
HIST 1483	U.S. History to the Civil War -or-	
HIST 1493	U.S. History Since the Civil War (GIS, GD, DM, CAD, CA)	
CS 1103	Introduction to Computers and Applications (CA, DM, GD)	
MATH 1513	College Algebra (CA, CAD, DM, GD, GIS)	
MATH 1613	Trigonometry (CAD, GIS)	
MATH 2023	Foundation of Geometry and Measurements (CAD)	
PHYS 1114	College Physics (CAD)	
GEOG 2603	World Regional Geography (GIS)	
	Geographic Information System-18 hours	
	Game Design -18 hours	
	Digital Media Design -18 hours	
	Computer-Aided Design -25 hours	
	Computer Animation -18 hours	

Support Courses		
Prefix & Number	Course Title	Credit Hours
FVP 1713	Screenwriting (CA)	
ART 1123	Drawing I (CA)	
	Faculty Approved Support Elective (CA, CAD, DM, GD, GIS)	
JB 2113	Advertising (DM)	
CS 1143	Beginning Programming (GD)	
MATH 1613	Trigonometry (GIS)	
	Geographic Information System (GIS) -15 hours	
	Game Design -10 hours	
	Digital Media Design -10-11 hours	
	Computer-Aided Design - 6 hours	
	Computer Animation -11 hours	

Life Skills Courses		
Prefix & Number	Course Title	Credit Hours
SCL 1001	Success in College and Life	1
		1