Major Highlights

Program Dashboard Report 2004-05

Degree and Credit Hour Trends 2005-06

Occupational Projections (2005 – 2015)

Program Assessment Plan (most current)

Summary of Program Assessment Results

Recommendations

Follow up

Computer Aided Design and Drafting Technology/Computer Aided Engineering
Major Highlights
August 2006

Overview

The information contained within this binder represents supporting reports and data associated with the CRC's review of the CAD/Computer Aided Engineering program. These documents are intended to provide a historical perspective, as well as an idea of current and future issues which may impact the short and long term viability of the program.

Major Highlights

- Since the program's inception in 1996, there have been 161 Associate Degrees awarded, with its peak reached in 2001-02. The number of Associate Degrees falls between the other two CAD programs, with 62 awarded in the CAD/Machine Tool program and 248 awarded in the CAD/Vehicle Design program. The number of certificates has remained steadily low in the last ten years, never going over 3 certificates awarded in an academic year.

- Credit hour enrollment in CAD courses has been on a steady decline over the past few years. After reaching a peak in 1998-99, credit hour enrollment is at its lowest point (2004-05).

- Declining enrollment has resulted in excess capacity as indicated by the percent of completed sections and the percent of sections filled to capacity. During 2004-05, the percent of completed CAD sections stood at 81%, slightly below the college-wide 87.7% figure. Moreover, CAD sections were filled to only 64.7% of capacity, well below the college-wide 81.3%

- There has been a significant decrease in the number of credit hours taken with CAD courses. In a four-year span dating from 2000-01 through 2004-05, the credit hour count dropped from 5,669 to 3,801. However, the percent of minority students enrolled in CAD courses is 25.7%, generally in line with the college-wide figure of 27.8%.

- Both the Program Dashboard and the Credit Hour Trends Report includes all CAD courses college-wide and does not break them into the separate CAD programs. Therefore, a closer examination may be necessary to pinpoint exactly where the excess capacity or any decline in the number of credit hours is occurring.

- Although enrollment has been declining, students appear to be performing well. The percent of student withdrawals from CAD courses is at 10.8%, which is below the college-wide average of 17.5%, while the percent of incompletes (1.8%) is the same for CAD and college-wide. Meanwhile, 78.6% of all students successfully pass CAD courses with a grade of "C" or higher, which is above the college-wide average of 68.6%.

- Comparing established benchmarks to the Program Dashboard measures, CAD courses have exceeded the benchmark for the student course completion rate, indicating student success. However, the courses have fallen below the benchmarks in terms of section capacity, again suggesting there is excess capacity in CAD course offerings.

Source: OCC, Office of Assessment & Effectiveness

- Occupations related to CAD/Computer Aided Engineering are showing mixed trends over the next ten years, with Engineering Technicians and Mechanical Engineering Technicians showing growth and Aerospace Engineers and Mechanical Drafters showing a downward trend in new jobs. Projected trends for these occupations may be due to economic restructuring e.g. outsourcing and as a result, there may be fewer opportunity for CAD graduates in the future. Yet it is projected that all of these occupations will see increased demand due to retirement, out-migration, death, etc. In the case of Engineering Technicians (except drafters, all other), there will be rapid growth in both of these areas, with a projection of 796 new jobs and 781 replacement jobs. In order to optimize employment opportunities for CAD graduates a review of program content in relation to the skills required for future jobs may be warranted.

- Historically, the program has not demonstrated on-going implementation of its Program Assessment Plan. Between May 2004 and June 2005, the program had fifteen benchmarks to assess, some of which were the same benchmarks for both years, but none of them were assessed during this time frame.

- During 2005-06, the Program Assessment Plan was revised based on input from SOAC. Currently, the plan has three Learning Outcomes with two benchmarks relating to the first outcome and one benchmark for the other two outcomes.

Source: OCC, Office of Assessment & Effectiveness

Oakland Community College
Program Dashboard 2004-05

The purpose of the program dashboard is to provide a data driven tool designed for the systematic and objective review of all curriculum offerings. Based on a common set of measures which apply to all programs/disciplines the program dashboard facilitates the systematic identification of well performing as well as ailing curriculum so early intervention (triage) efforts can be undertaken.

In a rapidly changing economic and competitive environment it is necessary if not imperative to continually review curriculum offerings annually. Dashboard reports are a useful tool for monitoring program performance. In addition, they allow for an integrated approach for collecting, presenting, and monitoring data to meet long and short-term programmatic decision-making needs. As in an airplane, the dashboard consists of a wide variety of indicator lights to provide the "pilot" information about the overall performance of the highly complex machine.

Program Dashboard
Detail Report

Prefix CAD **Dashboard Score** 9.07
Title Computer Aided Design and Drafting

	Program	College Wide
Sections Filled to Capacity	64.7%	81.3%
Percent of Completed Sections	81.0%	87.7%
Headcount Trend Ratio	0.89	1.02
Credit Hour Trend Ratio	0.88	1.01
Percent of Minority Students	25.7%	27.8%
Percent of Withdrawals	10.8%	17.5%
Percent of Incompletes	1.8%	1.8%
Student Course Completion Rate	78.6%	68.6%

Sections Filled to Capacity

Prefix CAD

Prefix Title Computer Aided Design and Drafting

Total Students	1,132
Total Capacity	1,750
Sections Filled To Capacity	64.7%

Definition:

The percent of all available seats which are filled on the terms official census date. Time Frame: Academic Year (Summer II, Fall, Winter, Summer I). Data Source: One-tenth-day of each term.

Methodology:

Total number of sections (credit courses only) that are filled to their designated capacity e.g. allocated seats divided by the total number of available seats in all sections throughout the academic year (July 1 through June 30). In other words, how many sections are filled to their capacity on the sections 1/10 day out of all sections? Include sections that are more than filled / overflowing in calculation.

One-Tenth Day data shows the capacity filled numbers at approximately 3 weeks after the Fall and Winter terms begin; and 1 week after the Summer I and II terms begin. This data will not provide additional enrollment data if the sections begin after the one-tenth day.

While a section may only have a few students enrolled in it the college is able to designate some sections as 'full' so that they are not cancelled (per OCCFA Master Agreement). Therefore some disciplines may show low fill capacity rates, and the college never cancelled the sections or condense the students into fewer sections offering the same course.

Percent of Completed Sections

Prefix CAD

Prefix Title Computer Aided Design and Drafting

Active Sections	94
Cancelled Sections	22
Total Sections	116
Percent of Completed Sections	81.0%

Definition:

Of all offered sections, the percent of sections that are completed (not cancelled). Time Frame: Academic Year (Summer II, Fall, Winter, Summer I). Data Source: End of session, after grades are posted.

Methodology:

Annually, the total number of offered credit sections that are completed. Formula = number of completed credit sections divided by the total number of offered credit sections. In other words, the percent of these sections that are not cancelled.

Headcount Trend Ratio

Prefix	CAD
Prefix Title	Computer Aided Design and Drafting
Headcount Year 1	1,626
Headcount Year 2	1,358
Headcount Year 3	1,441
Headcount Year 4	1,146
Headcount Period 1	1,475
Headcount Period 2	1,315
Headcount Ratio	0.89

Definition:

Trend in student headcount based on a three year rolling average. Time Frame: Academic Year (Summer II, Fall, Winter, Summer I). Data Source: One-tenth-day of each term. (Note: this measure is not used in the calculation of the Program Dashboard score since it parallels trends depicted in Credit Hours.)

Methodology:

In order to establish a meaningful enrollment statistic which applies to large as well as small disciplines/programs a "ratio" was calculated based on a three year rolling average of student headcount.

The formula used to calculate this measure involves three simple steps:

a.☐Year 1 + Year 2 + Year 3 / 3 = Period 1
b.☐Year 2 + Year 3 + Year 4 / 3 = Period 2
c.☐Period 2 / Period 1 = Ratio

If the ratio is greater than "1" this means there has been an enrollment increase. On the other hand, if the ratio is less than "1" this translates into an enrollment decline. The larger the number the larger the enrollment increase. Likewise, the lower the number the greater the enrollment decline.

Credit Hour Trend Ratio

Prefix	CAD
Prefix Title	Computer Aided Design and Drafting
Credit Hour Year 1	5,669
Credit Hour Year 2	4,760
Credit Hour Year 3	4,911
Credit Hour Year 4	3,801
Credit Hour Period 1	5,113
Credit Hour Period 2	4,491
Credit Hour Ratio	0.88

Definition:

Trend in student credit hours based on a three year rolling average. Time Frame: Academic Year (Summer II, Fall, Winter, Summer I). Data Source: One-tenth-day of each term.

Methodology:

In order to establish a meaningful enrollment statistic which applies to large as well as small disciplines/programs a "ratio" was calculated based on a three year rolling average of student credit hours.

The formula used to calculate this measure involves three simple steps:

a.☐Year 1 + Year 2 + Year 3 / 3 = Period 1
b.☐Year 2 + Year 3 + Year 4 / 3 = Period 2
c.☐Period 2 / Period 1 = Ratio

If the ratio is greater than "1" this means there has been an enrollment increase. On the other hand, if the ratio is less than "1" this translates into an enrollment decline. The larger the number the larger the enrollment increase. Likewise, the lower the number the greater the enrollment decline.

Percent of Minority Students

Prefix CAD

Prefix Title Computer Aided Design and Drafting

Minority Students	192
Total Students	748
Percent of Minority Students	25.7%

Definition:

The percent of students who are minority. Minority status is self-reported by the student and includes: African American, Asian, Hispanic, Native American Indian and Other. Time Frame: Academic Year (Summer II, Fall, Winter, Summer I). Data Source: One-tenth-day of each term.

Methodology:

Percentages are based on those students enrolled on the terms official census date (one tenth day) and excludes missing data.

Percent of Withdrawals

Prefix CAD

Prefix Title Computer Aided Design and Drafting

Total Withdrawals 120

Total Grades 1,110

Percent of Withdrawals 10.8%

Definition:

The percent of students who withdraw from their course after the term begins. Time Frame: Academic Year (Summer II, Fall, Winter, Summer I). Data Source: End of session files, after grades are posted.

Methodology:

Percent of withdrawals is derived by dividing the total number of student initiated withdrawals by the total number of grades and marks awarded throughout the academic year. The Withdrawal-Passing (WP), and Withdrawal-Failing (WF) are considered Withdrawals (W). Meanwhile, calculations exclude: Audit (AU), Not Attended (N), and Not Reported (NR).

Percent of Incompletes

Prefix CAD

Prefix Title Computer Aided Design and Drafting

Total Incompletes	20
Total Grades	1,110
Percent of Incompletes	1.8%

Definition:

The percent of students who receive an incomplete in their course. Time Frame: Academic Year (Summer II, Fall, Winter, Summer I). Data Source: End of session files, after grades are posted.

Methodology:

Percent of incompletes is derived by dividing the total number of incompletes by the total number of grades and marks awarded throughout the academic year. The Continuous Progress (CP) grade is considered an Incomplete (I). Meanwhile, calculations exclude: Audit (AU), Not Attended (N), and Not Reported (NR).

Student Course Completion Rate

Prefix CAD

Prefix Title Computer Aided Design and Drafting

Successful Grades	872
Total Student Grades	1,110
Student Course Completion Rate	78.6%

Definition:

The percent of students who successfully complete a course with a grade of "C" or higher. Time Frame: Academic Year (Summer II, Fall, Winter, Summer I). Data Source: End of session files, after grades are posted.

Methodology:

Student success rates are based on end of session data after all grades have been posted. Data includes grades from the entire academic year (Summer II, Fall, Winter, and Summer I). The following grades/marks are excluded from the calculation: Audit (AU), Not Attended (N) and Not Reported (NR).

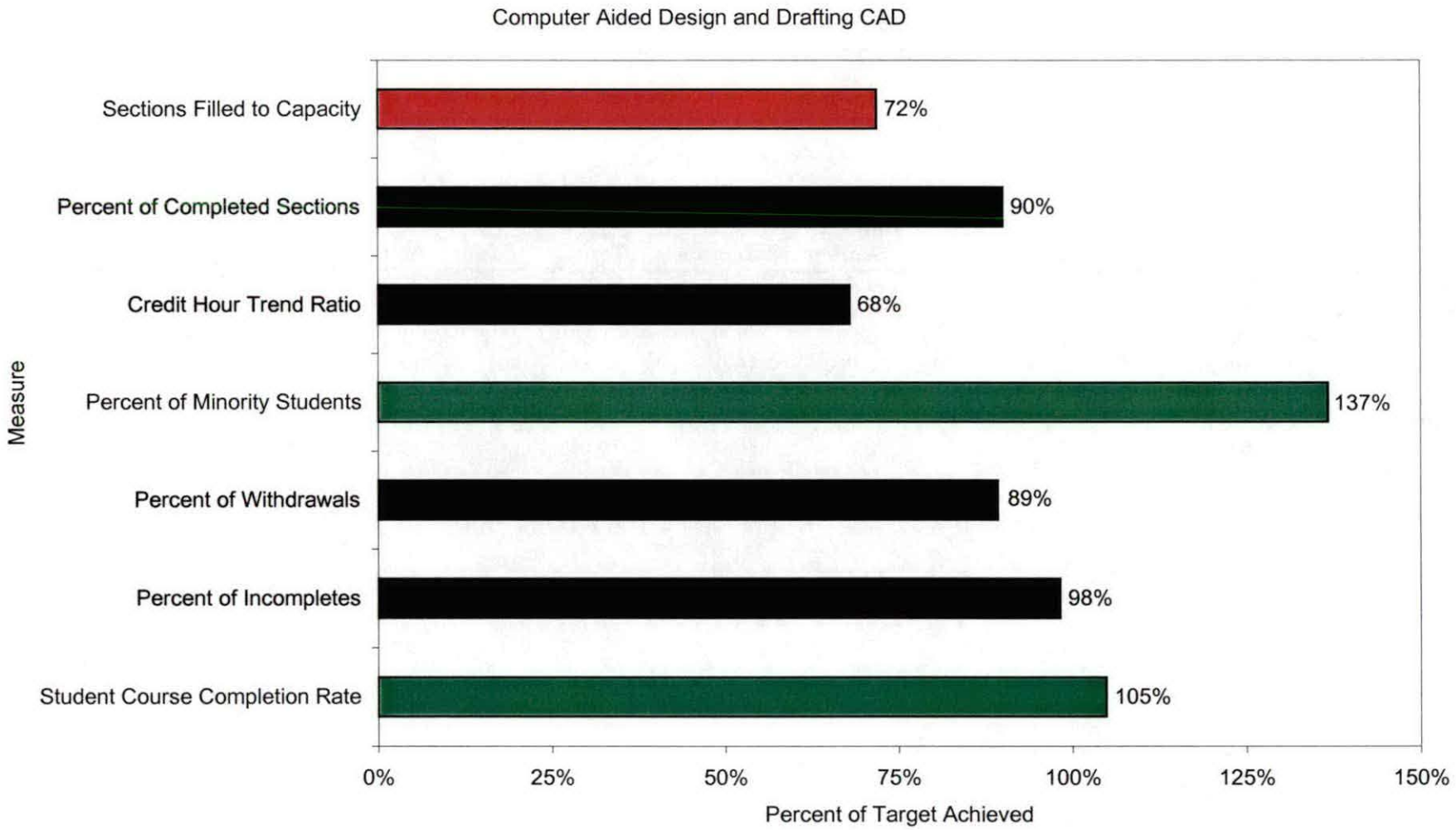
Oakland Community College
Program Dashboard Report
2004-05

Computer Aided Design and Drafting CAD
Dashboard Score: 9.07

Measures	Current Score	Benchmarks: Trouble Score	Benchmarks: Target	Percent of Target Achieved	Weight	Weighted Score
Sections Filled to Capacity	64.7%	75.0%	90.0%	71.9%	18.0%	1.29
Percent of Completed Sections	81.0%	75.0%	90.0%	90.0%	14.2%	1.28
Credit Hour Trend Ratio	0.88	0.75	1.30	68.0%	15.3%	1.04
Percent of Minority Students	25.7%	16.9%	18.8%	136.7%	6.1%	0.83
Percent of Withdrawals	10.8%	15.0%	0.0%	89.2%	12.0%	1.07
Percent of Incompletes	1.8%	3.0%	0.0%	98.2%	7.9%	0.78
Student Course Completion Rate	78.6%	60.0%	75.0%	104.8%	26.5%	2.78

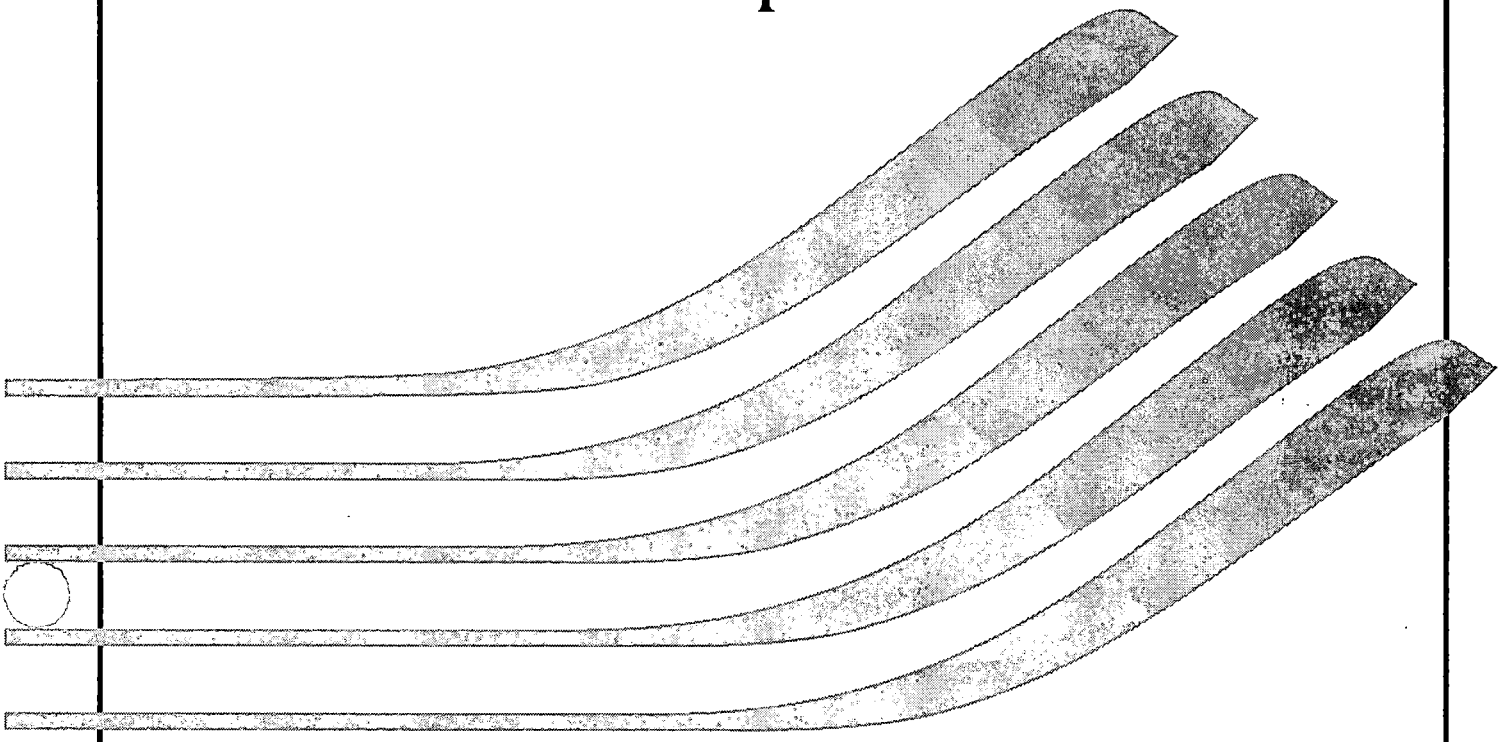
Source: Office of Assessment and Effectiveness
Updated On: 8/7/2006

Oakland Community College
Percent of Target Achieved
2004-05



Source: Office of Assessment and Effectiveness
Updated On: 8/7/2006

Institutional Research Report



Computer Aided Design and Drafting Technology/Computer Aided Engineering Opt. Degree and Credit Hour Trends Reports for Curriculum Review Committee

OAKLAND COMMUNITY COLLEGE

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Degree Trends Report

Computer Aided Engineering Tech Opt.

CAD.CAE

2004-05

Prepared by:
Oakland Community College
Office of Institutional Research
July 31, 2006

Oakland Community College
Degree Trends Report
Computer Aided Engineering Tech Opt. (CAD.CAE)
1995-96 through 2004-05

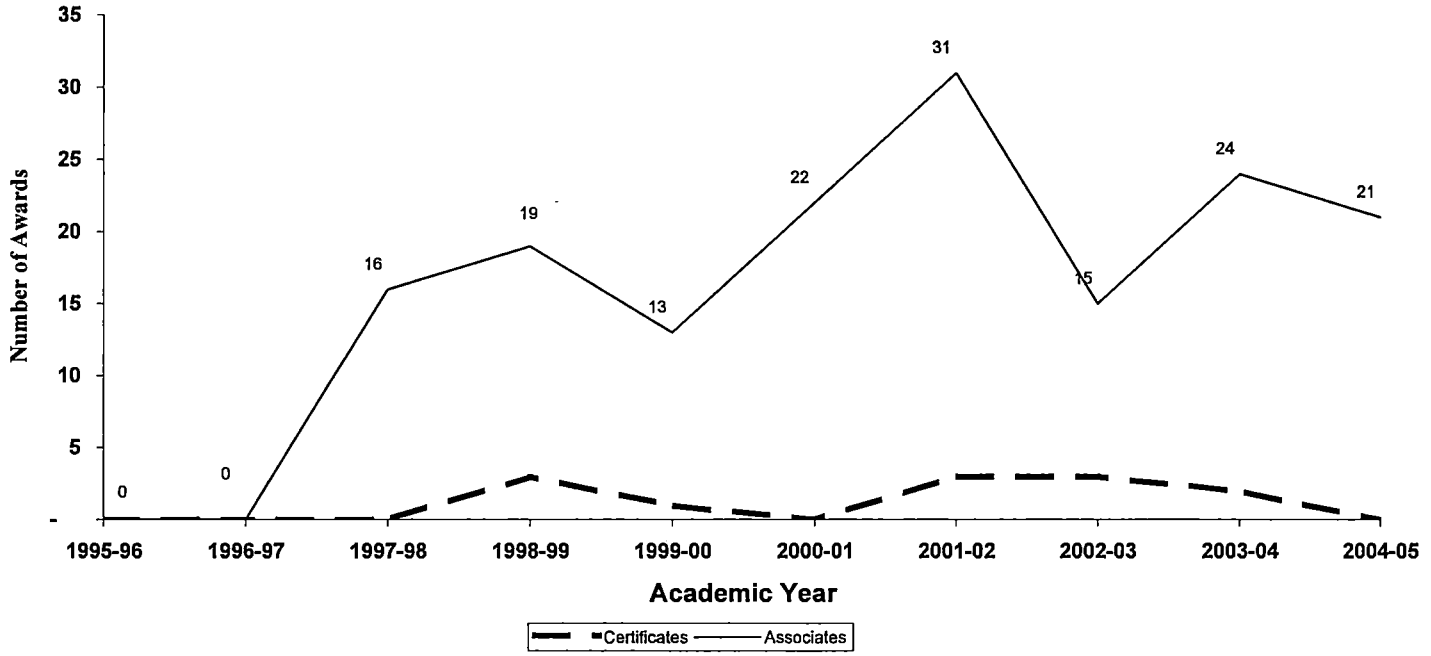
The Degree Trends Report is developed by the Office of Institutional Research based on data compiled from official college records which are submitted to the State of Michigan for the IPEDS (Integrated Post-Secondary Education System) Annual Degrees Conferred Report. The Degree Trends Report examines trends of OCC degrees, based on specific programs. The standard format offers information about certificates and associate degrees awarded. In the event that a given program offers only a certificate or an associate degree, information describing the other type of award will not be shown.

Trends over a specified period of time are illustrated by the following graphs for Computer Aided Engineering Tech Opt. (CAD.CAE)

- Ten-year trend showing the annual awards conferred in Computer Aided Engineering Tech Opt.
- Rate of change in annual awards conferred in Computer Aided Engineering Tech Opt.
- The three-year Moving Mean for annual awards conferred in Computer Aided Engineering Tech Opt.
- Ten-year trend in awards conferred collegewide.

Questions regarding this report can be forwarded to the Office of Institutional Research at (248) 341-2123.

Oakland Community College
Associate Degrees and Certificates Awarded
Computer Aided Engineering Tech Opt.
1995-96 through 2004-05



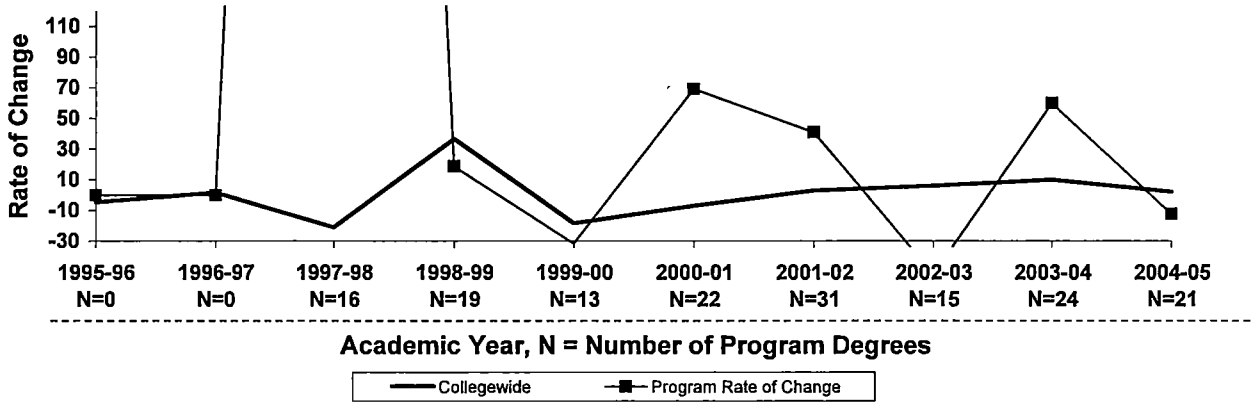
Academic Yr.	Certificates	Associates
1995-96	0	0
1996-97	0	0
1997-98	0	16
1998-99	3	19
1999-00	1	13
2000-01	0	22
2001-02	3	31
2002-03	3	15
2003-04	2	24
2004-05	0	21

Source: OCC, Office of Institutional Research

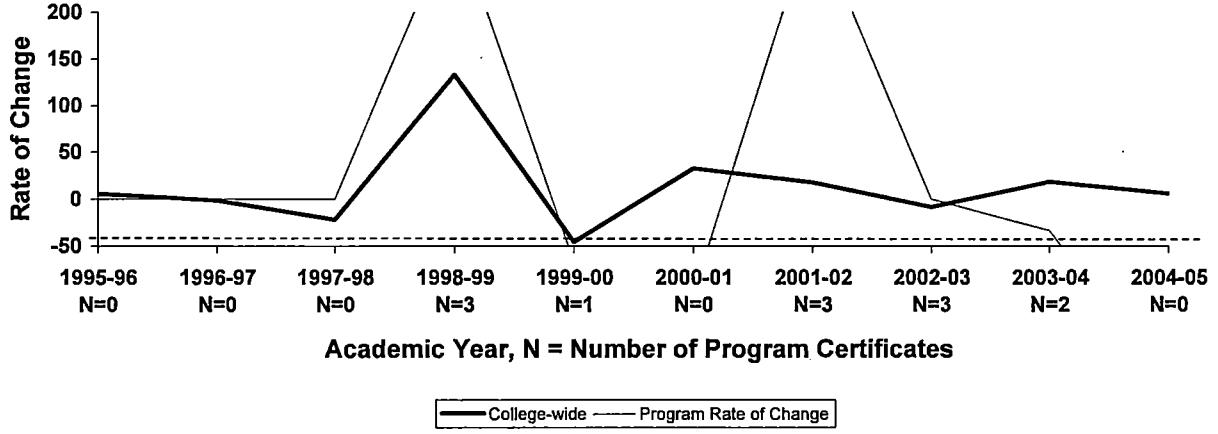
7/31/2006

Oakland Community College
Rate of Change in Annual Awards
College-Wide
1995-96 through 2004-05

Associate Degrees



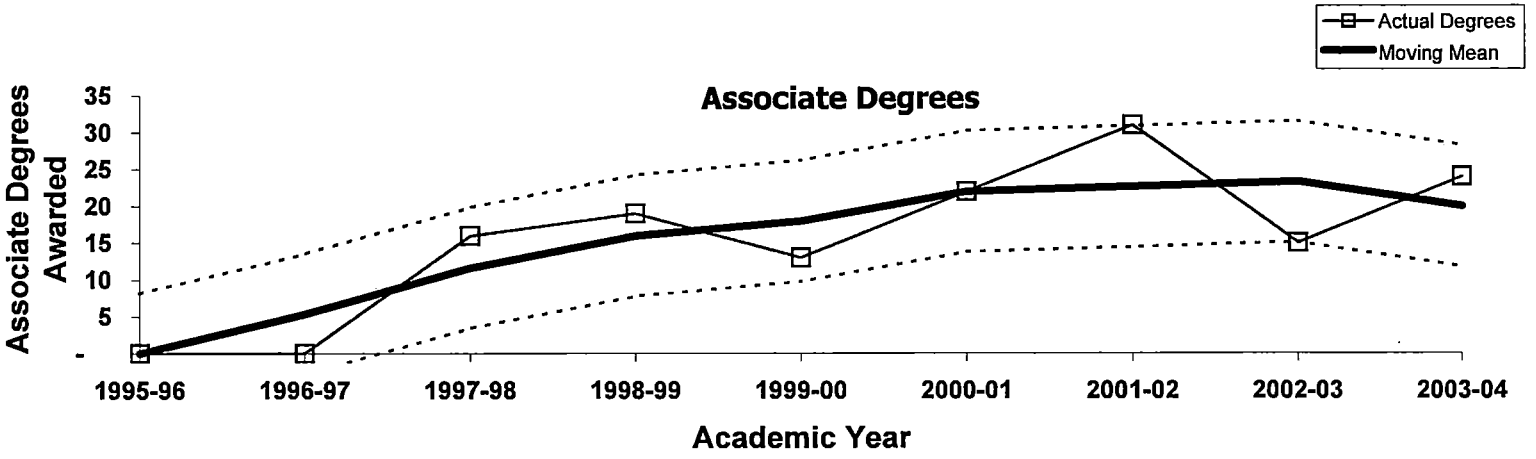
Certificates

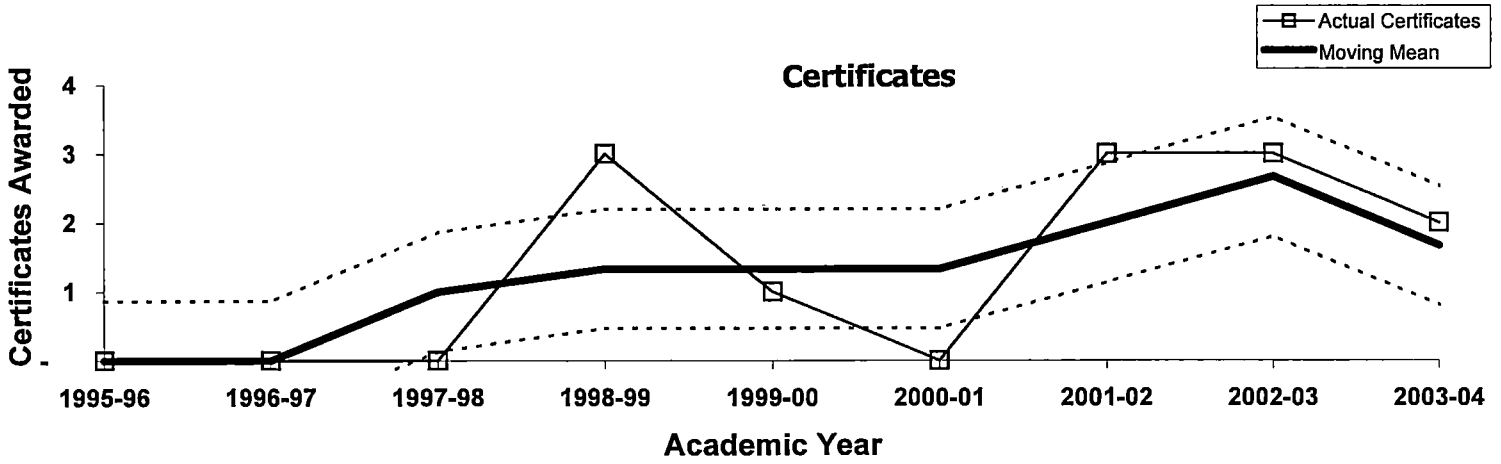


Source: OCC, Office of Institutional Research

7/31/2006

Oakland Community College
Three Year Moving Mean in Annual Awards
Computer Aided Engineering Tech Opt.
1995-96 through 2003-04

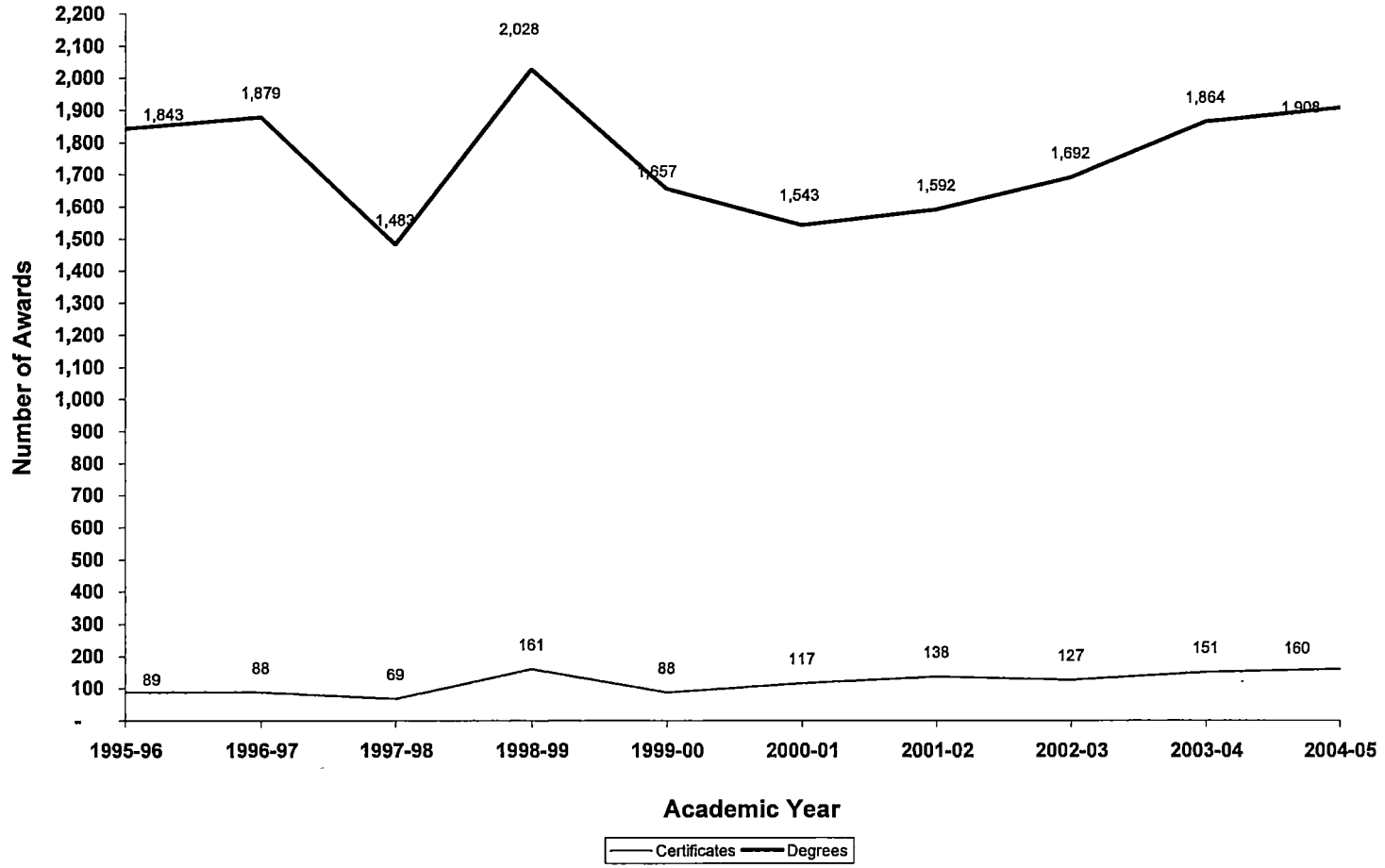




Source: OCC, Office of Institutional Research

7/31/2006

Oakland Community College
Associate Degrees and Certificates Awarded
College-Wide
1995-96 through 2004-05



Source: OCC, Office of Institutional Research

7/31/2006

OAKLAND
COMMUNITY
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Credit Hour Trends Report
Computer Aided Design & Drafting
CAD
2004-05

Prepared by:
Oakland Community College
Office of Institutional Research
July 31, 2006

Oakland Community College
Credit Hour Trends Report
Computer Aided Design & Drafting
1994-95 through 2004-05

Each year the Office of Institutional Research prepares the Credit Hour Trends Report, based on data submitted to the State of Michigan in the annual ACS-6 (Activities Classification Structure) process. This report is based on each course section's official count date (1/10th Day). The Credit Hour Trends Report examines annual (July 1 - June 30) enrollment trends of OCC disciplines, based on course prefix codes.

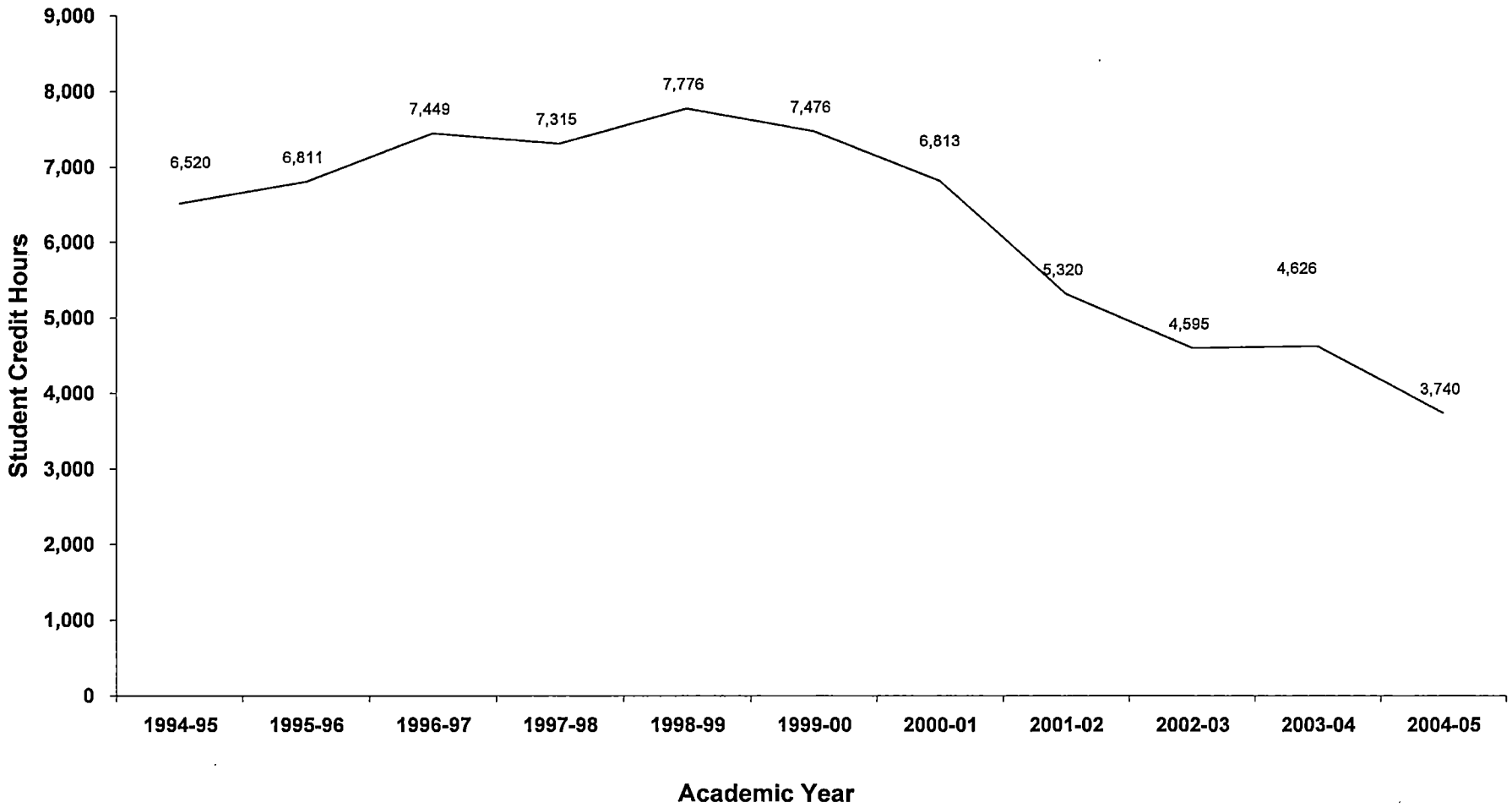
Trends over a specified period of time are illustrated by the following graphs for Computer Aided Design & Drafting.

- Graph depicting ten-year trend in student credit hours generated by Computer Aided Design & Drafting
- Graphs depicting three-year moving mean and rate of change in student credit hours for Computer Aided Design & Drafting.
- Ten-year trend in annual credit hours generated Collegewide.

Questions regarding this report can be forwarded to the Office of Institutional Research at (248) 341-2123.

Oakland Community College
Ten-Year Trend in Student Credit Hours
Computer Aided Design & Drafting
1994-95 through 2004-05

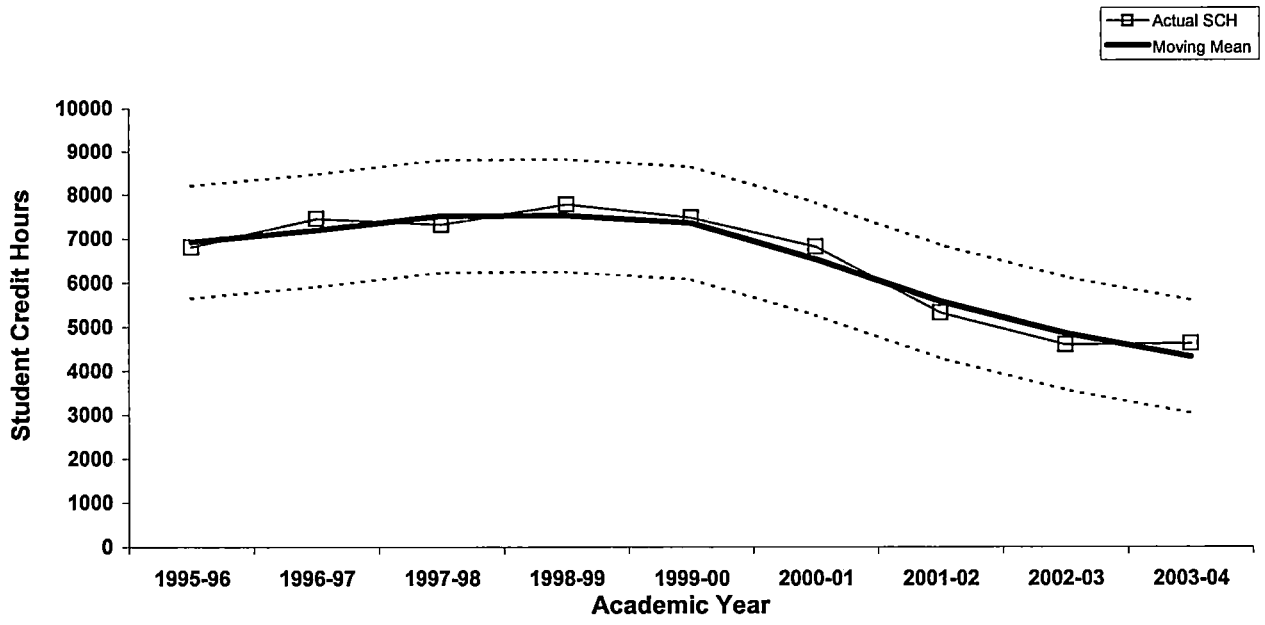
	1994-95 SCH	1995-96 SCH	1996-97 SCH	1997-98 SCH	1998-99 SCH	1999-00 SCH	2000-01 SCH	2001-02 SCH	2002-03 SCH	2003-04 SCH	2004-05 SCH	5-Year % Change	10-Year % Change
Computer Aided Design & D	6,520	6,811	7,449	7,315	7,776	7,476	6,813	5,320	4,595	4,626	3,740	-50.0	-42.6
College Wide Totals	471,593	451,159	443,471	431,521	440,448	438,997	453,054	447,928	478,827	468,777	472,892	7.7	0.3



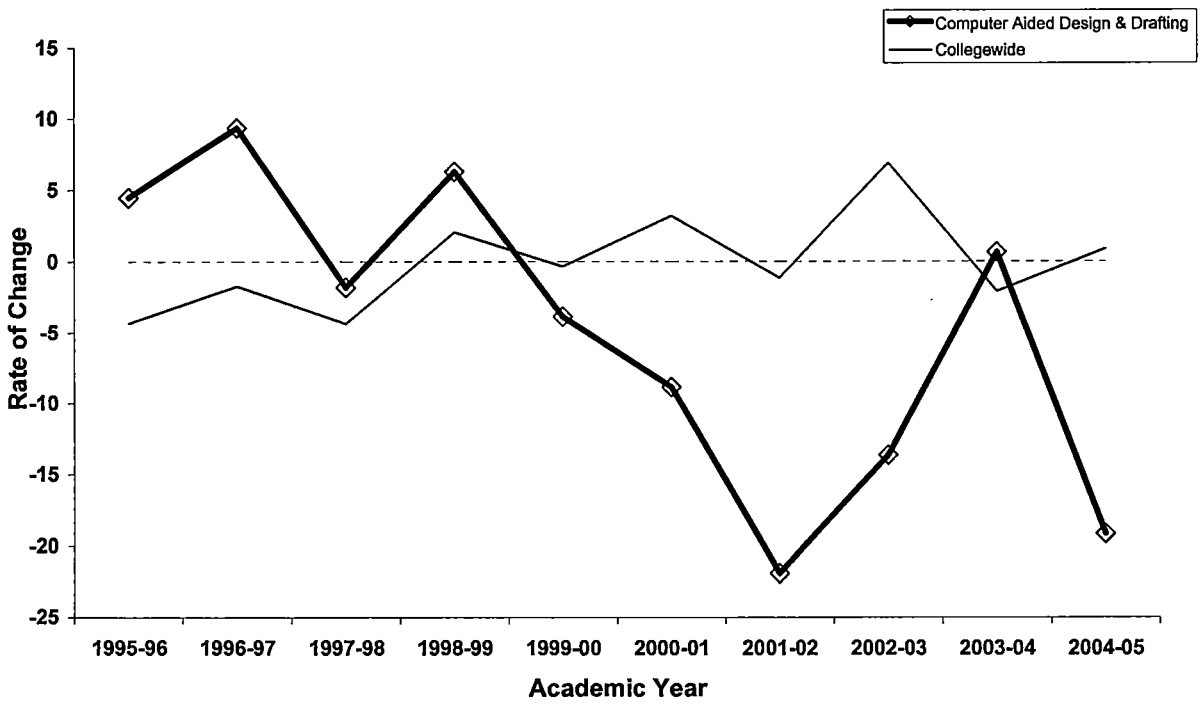
Source: OCC, Office of Institutional Research

7/31/2006

Oakland Community College
Three-Year Moving Mean
Computer Aided Design & Drafting
1995-96 through 2003-04



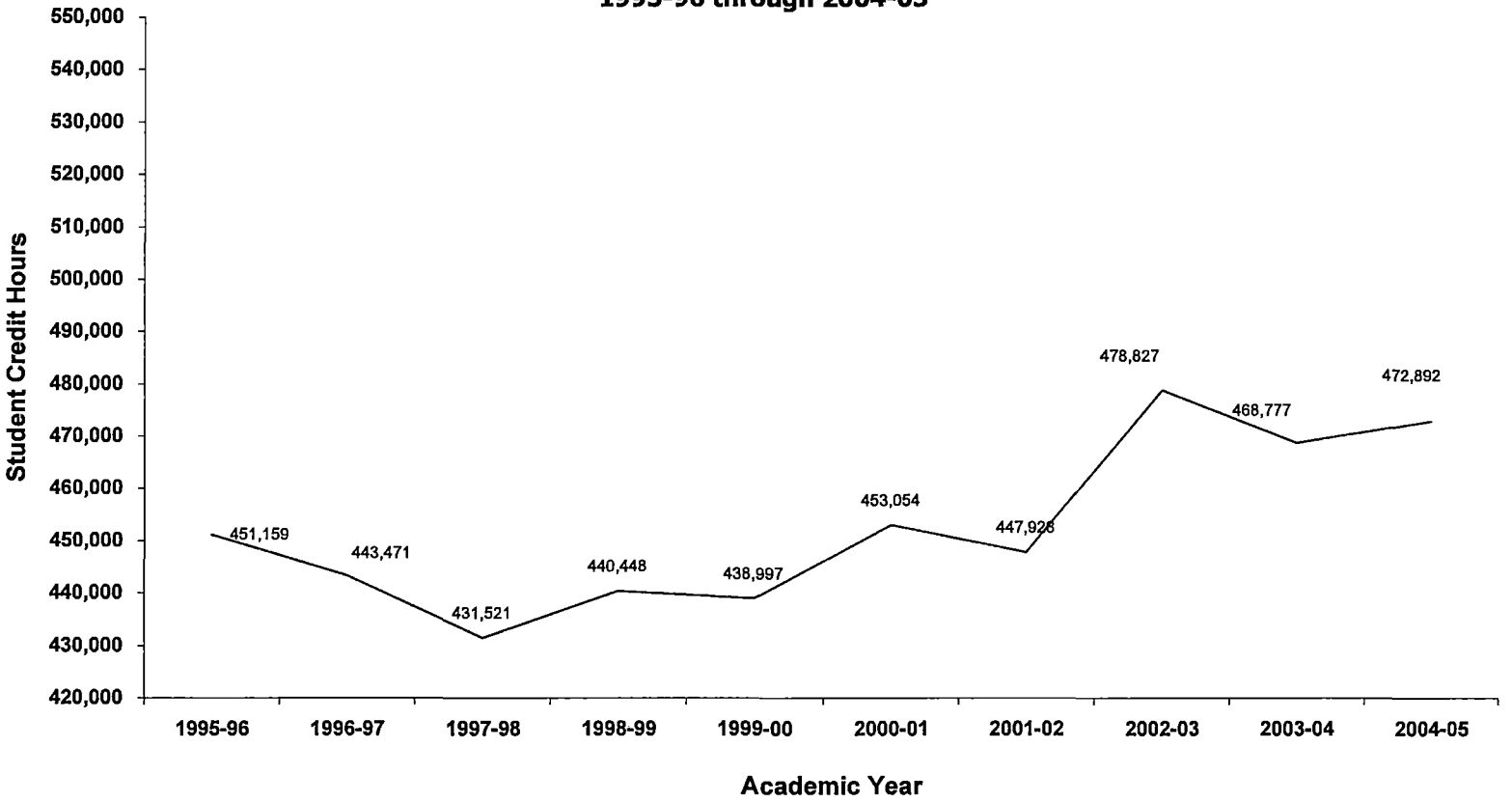
Rate of Change in Student Credit Hours 1995-96 through 2004-05



Source: OCC, Office of Institutional Research

7/31/2006

Oakland Community College
Ten-Year Trend in Student Credit Hours
College-Wide
1995-96 through 2004-05



1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
451,159	443,471	431,521	440,448	438,997	453,054	447,928	478,827	468,777	472,892

Source: OCC, Office of Institutional Research

7/31/2006

Occupational Projections
(2005 – 2015)

The following projections are for those occupations most closely associated with this program. However, the extent to which specific OCC programs lead to jobs reflected within a given Standard Occupational Code (SOC) is highly dependent upon the way in which the U.S. Department of Labor groups specific occupations.

Occupational projections are presented at the "Detailed Standard Occupational Code" (N = 749) level according to the U.S. Department of Labor.

Projections are subject to change based on emerging economic, political and social forces.

These projections reflect the four county region of Oakland, Macomb, Livingston and Wayne counties.

Projections are based on data from 24 major data sources, including the U.S. Department of Commerce, Bureau of Labor Statistics (BLS), and Census data. To forecast occupational demand at the county level, BLS data are regionalized and adjusted for emerging technological changes, the age of workers by occupation, and other factors affecting occupational demand.

This information was obtained from CCbenefits Inc. Community College Strategic Planner (CCSP).

Data presented in the following tables include:

- Base Year: Current number of jobs in 2005.
- Five Year: Number of projected jobs in 2010.
- Ten Year: Number of projected jobs in 2015.
- New Jobs: Projected number of new jobs between 2005 and 2015.
- Replacement Jobs: Projected number of replacement jobs between 2005 and 2015.
- % New Jobs: Percent of projected new jobs in 2015 using 2005 as the base year.
- % Replacement Jobs: Percent of projected replacement jobs in 2015 using 2005 as the base year.
- % New and Replacement Jobs: Percent of projected new and replacement jobs in 2015 using 2005 as the base year.
- Earnings: Average annual earnings within the SOC code in 2005.

Note: Percent change figures must be interpreted carefully since they are based on actual number of jobs. In some cases the actual number of jobs may be quite low, thereby giving a misleading picture if only the percentage was considered.

CAD Computer Aided Engineering Related Occupations (2005 - 2015)

SOC Detail Group

SOC Code	Name	Base Year	Five Year	Ten Year	New Jobs	Rplmnt Jobs	% New Jobs	% Rplmnt	% New & Rplmnt	Earnings
17-2011	Aerospace Engineers	190	175	164	-26	46	-14.0%	24.0%	11.0%	$105,518
17-3013	Mechanical Drafters	3,831	3,503	3,272	-558	1,052	-15.0%	27.0%	13.0%	$55,307
17-3027	Mechanical Engineering Technicians	1,209	1,251	1,263	53	249	4.0%	21.0%	25.0%	$52,458
17-3029	Engineering Technicians, Except Drafters, All Other	3,302	3,830	4,098	796	781	24.0%	24.0%	48.0%	$57,928
Totals:		8,532	8,759	8,797	265	2,128				

Source: OCC, Office of Assessment & Effectivenes (CCSP)

CAD/Computer Aided Engineering Option Related Occupations
SOC Detail Definitions

SOC Code 17-2011
Name Aerospace Engineers

Definition: Perform a variety of engineering work in designing, constructing, and testing aircraft, missiles, and spacecraft. May conduct basic and applied research to evaluate adaptability of materials and equipment to aircraft design and manufacture. May recommend improvements in testing equipment and techniques.

Examples: Aerodynamicist, Flight Test Engineer, Aeronautical Engineer

SOC Code 17-3013
Name Mechanical Drafters

Definition: Prepare detailed working diagrams of machinery and mechanical devices, including dimensions, fastening methods, and other engineering information.

Examples: Die Designer, Aeronautical Drafter

SOC Code 17-3027
Name Mechanical Engineering Technicians

Definition: Apply theory and principles of mechanical engineering to modify, develop, and test machinery and equipment under direction of engineering staff or physical scientists.

Examples: Heat Transfer Technician, Optomechanical Technician, Tool Analyst

SOC Code 17-3029
Name Engineering Technicians, Except Drafters, All Other

Definition: All engineering technicians, except drafters, not listed separately.

Examples: Laser Specialist, Metallurgical Technician, Material Stress Tester

Program Assessment Plan
CAD Computer Aided Engineering Technology

Catalog Description
Computer Aided Engineering Technology is an option in the CAD Associate in Applied Science Degree program. This program option provides students with instruction in engineering related design with emphasis on concepts and applications of Computer Aided Engineering Technology. The program option covers subjects such as principles of Kinematics and its applications in engineering-related design, concepts and techniques of finite element modeling for stress analysis and nondestructive testing, techniques and applications of solid modeling for design and manufacturing and computer aided techniques for numerical control tool path generation for manufacturing. Upon completion of this associate degree program or certificate, graduates will be prepared for employment in engineering, manufacturing and design analysis industries. Also, upon completion of the associate degree program, students may transfer to a four-year institution.

Statement of Purpose
To prepare students for careers in industry and business, update students' education for an existing career, or to prepare students for transfer to baccalaureate programs. The specific goal of the program is to graduate competent designers who have an understanding of design fundamentals as they pertain to computer-aided design and computer aided engineering.

Learning Outcome
Students will develop technical and analytical skills to appropriately apply engineering design techniques in work settings.

Benchmark 1
80% of the students will be able to apply design techniques appropriate for their field of study.

Assessment Method 1
Students will be able to apply design knowledge to applications in rapid prototyping and stress analysis.

Assessment Date 1 5/1/2007 **Findings Sent to OAE Date 1 6/1/2007**

Benchmark 2
80% of students will achieve at least a grade of C.

Assessment Method 2
Students will be tested in class to validate the result.

Assessment Date 2 5/1/2007 **Findings Sent to OAE Date 2 6/1/2007**

Learning Outcome
Students will successfully develop designs relating to mechanical and other design applications.

Benchmark 1
80% of the students will complete a functional design.

Assessment Method 1
Stress Analysis Project, CAD 2160; Art-to-Part Project, CIM 2300.

Assessment Date 1 5/1/2007 **Findings Sent to OAE Date 1 6/1/2007**

Learning Outcome
Students will have ability to communicate effectively.

Benchmark 1
All graduates will complete a written communications course.

Assessment Method 1
Passing grade in ENG 1350 or ENG 1510 or ENG 2200.

Assessment Date 1 5/1/2007 **Findings Sent to OAE Date 1 6/1/2007**

Summary of Program Assessment Results
CAD Computer Aided Engineering Technology

Catalog Description
Computer Aided Engineering Technology is an option in the CAD Associate in Applied Science Degree program. This program option provides students with instruction in engineering related design with emphasis on concepts and applications of Computer Aided Engineering Technology. The program option covers subjects such as principles of Kinematics and its applications in engineering-related design, concepts and techniques of finite element modeling for stress analysis and nondestructive testing, techniques and applications of solid modeling for design and manufacturing and computer aided techniques for numerical control tool path generation for manufacturing. Upon completion of this associate degree program or certificate, graduates will be prepared for employment in engineering, manufacturing and design analysis industries. Also, upon completion of the associate degree program, students may transfer to a four-year institution.

Program Statement of Purpose
To prepare students for careers in industry and business, update students' education for an existing career, or to prepare students for transfer to baccalaureate programs. The specific goal of the program is to graduate competent designers who have an understanding of design fundamentals as they pertain to computer-aided design and computer aided engineering.

Learning Outcome
Students will have the ability to communicate effectively.

Benchmark 1
All graduates will complete a written communications course and produce a classroom presentation.

Assessment Method 1
Passing grade in ENG 1350, or ENG 1450, or ENG 1510, or ENG 2200.

Benchmark Scheduled To Be Assessed: 5/1/2004
Assessment Results Sent To Office of Assessment & Effectiveness: 6/1/2004

Findings 1
Assessment not implemented.

Benchmark 1
All graduates will complete a written communications course and produce a classroom presentation.

Assessment Method 1
Passing grade in ENG 1350, or ENG 1450, or ENG 1510, or ENG 2200.

Benchmark Scheduled To Be Assessed: 5/1/2005
Assessment Results Sent To Office of Assessment & Effectiveness: 6/1/2005

Findings 1
Assessment not implemented.

Benchmark 2
All graduates will complete a written communications course and produce a classroom presentation.

Assessment Method 2
Diversity presentation paper resulting in a cumulative minimum score of 80%.

Benchmark Scheduled To Be Assessed: 5/1/2004
Assessment Results Sent To Office of Assessment & Effectiveness: 6/1/2004

Findings 2
Assessment not implemented.

Benchmark 2
All graduates will complete a written communications course and produce a classroom presentation.

Assessment Method 2
Diversity presentation paper resulting in a cumulative minimum score of 80%.

Benchmark Scheduled To Be Assessed: 5/1/2005
Assessment Results Sent To Office of Assessment & Effectiveness: 6/1/2005

Findings 2
Assessment not implemented.

Learning Outcome
Students will develop diversity awareness and it's importance in this career field.

Benchmark 1
All students complete a written essay on a culture other than their own.

Assessment Method 1

Benchmark Scheduled To Be Assessed: 5/1/2004
Assessment Results Sent To Office of Assessment & Effectiveness: 6/1/2004

Findings 1
Assessment not implemented.

Benchmark 1
All students complete a written essay on a culture other than their own.

Assessment Method 1

Benchmark Scheduled To Be Assessed: 5/1/2005
Assessment Results Sent To Office of Assessment & Effectiveness: 6/1/2005

Findings 1
Assessment not implemented.

Benchmark 2
All students will present paper to remainder of class verbally and by using appropriate visual aids.

Assessment Method 2
Students will average 80% in evaluation by classmates on: presentation clarity, appropriate use of visual aids, and quality of visual aids.

Benchmark Scheduled To Be Assessed: 5/1/2004
Assessment Results Sent To Office of Assessment & Effectiveness: 6/1/2004

Findings 2
Assessment not implemented.

Benchmark 2
All students will present paper to remainder of class verbally and by using appropriate visual aids.

Assessment Method 2
Students will average 80% in evaluation by classmates on: presentation clarity, appropriate use of visual aids, and quality of visual aids.

Benchmark Scheduled To Be Assessed: 5/1/2005
Assessment Results Sent To Office of Assessment & Effectiveness: 6/1/2005

Findings 2
Assessment not implemented.

Benchmark 3
80% of the students successfully complete presentation.

Assessment Method 3

Benchmark Scheduled To Be Assessed: 5/1/2004
Assessment Results Sent To Office of Assessment & Effectiveness: 6/1/2004

Findings 3
Assessment not implemented.

Benchmark 3
80% of the students successfully complete presentation.

Assessment Method 3

Benchmark Scheduled To Be Assessed: **5/1/2005**
Assessment Results Sent To Office of Assessment & Effectiveness: **6/1/2005**

Findings 3
Assessment not implemented.

Learning Outcome
Students will successfully develop designs relating to mechanical and other design applications.

Benchmark 1
85% of the students complete a functional design.

Assessment Method 1
Stress Analysis Project, CAD 2160; Art-to-Part Project, CIM 2300.

Benchmark Scheduled To Be Assessed: **5/1/2005**
Assessment Results Sent To Office of Assessment & Effectiveness: **6/1/2005**

Findings 1
Assessment not implemented.

Learning Outcome
Students will develop technical and analytical skills to appropriately apply engineering design techniques in work settings.

Benchmark 1
85% of the students will be able to apply design techniques appropriate for their field of study.

Assessment Method 1
Students will be able to apply design knowledge to applications in rapid prototyping and stress analysis.

Benchmark Scheduled To Be Assessed: **5/1/2004**
Assessment Results Sent To Office of Assessment & Effectiveness: **6/1/2004**

Findings 1
Assessment not implemented.

Benchmark 1
85% of the students will be able to apply design techniques appropriate for their field of study.

Assessment Method 1
Students will be able to apply design knowledge to applications in rapid prototyping and stress analysis.

Benchmark Scheduled To Be Assessed: **5/1/2005**
Assessment Results Sent To Office of Assessment & Effectiveness: **6/1/2005**

Findings 1
Assessment not implemented.

Benchmark 2
85% of employers surveyed are satisfied with graduate's skills relating to design.

Assessment Method 2
PROE survey results of Advisory Committee member/employers on adequacy of student's skills.

Benchmark Scheduled To Be Assessed: 5/1/2004
Assessment Results Sent To Office of Assessment & Effectiveness: 6/1/2004

Findings 2
Assessment not implemented.

Benchmark 2
85% of employers surveyed are satisfied with graduate's skills relating to design.

Assessment Method 2
PROE survey results of Advisory Committee member/employers on adequacy of student's skills.

Benchmark Scheduled To Be Assessed: 5/1/2005
Assessment Results Sent To Office of Assessment & Effectiveness: 6/1/2005

Findings 2
Assessment not implemented.

CRC Recommendations for Computer Aided Design (CAD):
December 1, 2006

Vehicle Design Technology
Computer Aided Engineering Technology
CAD Machine Tool Technology

- Deans to have a discussion on how OCC duplicates new courses (such as INT 1300/2300 uses the same software as CAD 1100, but requires interior design projects...this could be done in CAD 1100 if requested).
- Office Assessment & Effectiveness: How many students in CAD contribute to General Education/Liberal Arts degrees?
- Recommend distance learning by fall 2008 to support working students, and see if the online course can take internationally to train those to whom the USA outsources (India etc).
- Consider marketing CAD 1100 as an elective to demonstrate computer literacy. Start with Counselor Update in January.
- The section filled to capacity is an issue to discuss with the Office of Assessment & Effectiveness. There appears to be a concern how the statistics are interpreted.
- Articulation agreement could be increased which could help stabilize the declining program. OCC might consider a University Center at MTEC to easily transfer students to colleges on site.
- CAD course fees will change (decrease from $90 to $ 40 (estimate)). Discuss the procedure with the program dean.
- Marketing is essential. Discuss not being on College Source with Graphics, and make sure it is on Career Cruising (adopted by OISD).
- Scanner is needed for parts design and development in CAD. This capital request has been taken to the campus Budget Committee.
- Can adjuncts be included in training to update skills? This will need to be discussed with the Technology dean.
- Work with dean to justify smaller teacher/student ratio (take a look at parapro/SI definition). Consider assistance since the course is hands on or smaller class size in order to better educate students
- Support plans for Building A at state approval level.