Major Highlights

Program Dashboard Report 2003-04

Degree and Credit Hour Trends 2004-05

Occupational Projections (2004 – 2014)

Program Assessment Plan (most current)

Summary of Program Assessment Results

Follow up

Recommendations

Computer Hardware Engineering Technology
Major Highlights
(February 2006)

Overview

The information contained within this binder represents supporting reports and data associated with the CRC's review of the Computer Hardware Engineering Technology 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

- Over the past ten years a total of 15 Certificates and 39 Associate degrees have been awarded in this program. The majority of these awards have been granted over the last four years:

- Credit hour enrollment in ECT courses have been on a steady decline over the past ten years. Since 1995-96, credit hours have fallen by 72%, and by 64% since 1999-00.

- During 2003-04 a total of five ECT sections were offered, none of which were canceled. Furthermore, average section size totaled 19.5 students, slightly below the college-wide average. Meanwhile, sections were filled to 72% of capacity during the academic year.

- The percent of minority students enrolled in ECT courses is slightly above the college-wide average.

- Both the percent of students who withdrawal and receive incompletes are below the college-wide average. Meanwhile, nearly 86% of all students successfully pass ECT courses with a grade of "C" or higher which is above the college-wide average of 65%.

- Occupations associated with Computer Hardware Engineering Technology are expected to experience varying levels of growth and decline over the next ten years. While some occupations are projected to grow (new jobs), others are forecasted to decline, while others will see increased demand due to retirement, out-migration, death, etc.

- In total the Computer Hardware Engineering Technology program has identified six Learning Outcomes with one Benchmark per Outcome. Since January 2005, two of the Benchmarks have been assessed.

Oakland Community College
Program Dashboard 2003-04
Prototype

This document represents the first Program Dashboard Report for Oakland Community College. As such it should be viewed as a prototype upon which further enhancements and refinements will be made.

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 will facilitate 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.

As a prototype it is recognized that there are limitations with the current report. Through its introduction and application these limitations will be addressed and adequately resolved in future productions of the program dashboard.

Program Dashboard
Detail Report

Prefix   ECT   Dashboard Score   6.43

Title   Computer Hardware Engineering Technology

	Program	College Wide
Average Section Size	19.5	23.3
Sections Filled to Capacity	72.2%	88.4%
Percent of Completed Sections	100.0%	89.1%
Weighted Percent Change in Headcount	-1.1%	3.5%
Weighted Percent Change in Credit Hours	-1.3%	3.0%
Percent of Minority Students	28.0%	27.1%
Percent of Withdrawals	10.8%	16.5%
Percent of Incompletes	0.0%	1.6%
Student Course Completion Rate	85.5%	64.8%

Prefix   ECT
Prefix Title   Computer Hardware Engineering Technology

Total Students   78
Number of Sections   4
Average Section Size   19.5

Definition:
Average number of students per section. Time Frame: Academic Year (Summer II, Fall, Winter, Summer I). Data Source: One-Tenth-Day of each term.

Methodology:
Total duplicated student headcount divided by total capacity of all sections over an academic year. Currently (2003-04 data) does not take into account the differences between "A" and "B" sections.

Sections Filled to Capacity

Prefix   ECT
Prefix Title   Computer Hardware Engineering Technology

Total Students   78
Total Capacity   108
Sections Filled To Capacity   72.2%

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   ECT
Prefix Title   Computer Hardware Engineering Technology

Active Sections   5
Cancelled Sections   0
Total Sections   5
Percent of Completed Sections   100.0%

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.

Weighted Percent Change in Headcount

Prefix   ECT
Prefix Title   Computer Hardware Engineering Technology

2000-01 Headcount	129
2001-02 Headcount	111
2002-03 Headcount	76
2003-04 Headcount	78
Three Year Average Change	-17
Weighted Percent Change in Headcount	-1.1%

Definition:
Percent change in total student headcount based on a three year weighted 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 statistic which applies to large as well as small disciplines/programs a "Weighted Percent Change" figure was calculated for this measure. The following series of formulas were applied:

First, a Three Year Average Change was calculated. The difference between year 2 and year 1 was added to the difference between year 3 and year 2, as well as added to the difference between year 4 and year 3. This sum total was then divided by 3 to obtain the Three Year Average Change. (Three Year Average Change = (year 2 – year 1) + (year 3 -year 2) + (year 4 - year 3) / 3)

Next, the Three Year Average Change was multiplied by the relative size of the discipline based on the proportion of students enrolled in the discipline. This resulted in the Weighted Change statistic. (Weighted Change = Three Year Average Change X Discipline Proportion)

Next, the Three Year Average Percent Change was calculated. The Three Year Average Change (see above) was divided by the average enrollment in the discipline/program over the past three years. (Three Year Average Percent Change = Three Year Average Change / ((year 2 + year 3 + year 4) / 3))

Finally, the Weighted Percent Change was derived by multiplying the Three Year Average Percent Change times the relative proportion of the discipline. (Weighted Percent Change = Three Year Average Percent Change X Weighted Change)

Weighted Percent Change in Credit Hours

Prefix   ECT
Prefix Title   Computer Hardware Engineering Technology

2000-01 Credit Hours	516
2001-02 Credit Hours	444
2002-03 Credit Hours	304
2003-04 Credit Hours	312
Three Year Average Change	-68
Weighted Percent Change in Credit Hours	-1.3%

Definition:
Percent change in total student credit hours based on a three year weighted 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 statistic which applies to large as well as small disciplines/programs a "Weighted Percent Change" figure was calculated for this measure. The following series of formulas were applied:

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Next, the Three Year Average Percent Change was calculated. The Three Year Average Change (see above) was divided by the average enrollment in the discipline/program over the past three years. (Three Year Average Percent Change = Three Year Average Change / ((year 2 + year 3 + year 4) / 3))

Finally, the Weighted Percent Change was derived by multiplying the Three Year Average Percent Change times the relative proportion of the discipline. (Weighted Percent Change = Three Year Average Percent Change X Weighted Change)

Percent of Minority Students

Prefix   ECT
Prefix Title   Computer Hardware Engineering Technology

Minority Students   14
Total Students   50
Percent of Minority Students   28.0%

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   ECT
Prefix Title   Computer Hardware Engineering Technology

Total Withdrawals   9
Total Grades   83
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   ECT
Prefix Title   Computer Hardware Engineering Technology

Total Incompletes   0
Total Grades   83
Percent of Incompletes   0.0%

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   ECT
Prefix Title   Computer Hardware Engineering Technology

Successful Grades   71
Total Student Grades   83
Student Course Completion Rate   85.5%

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).
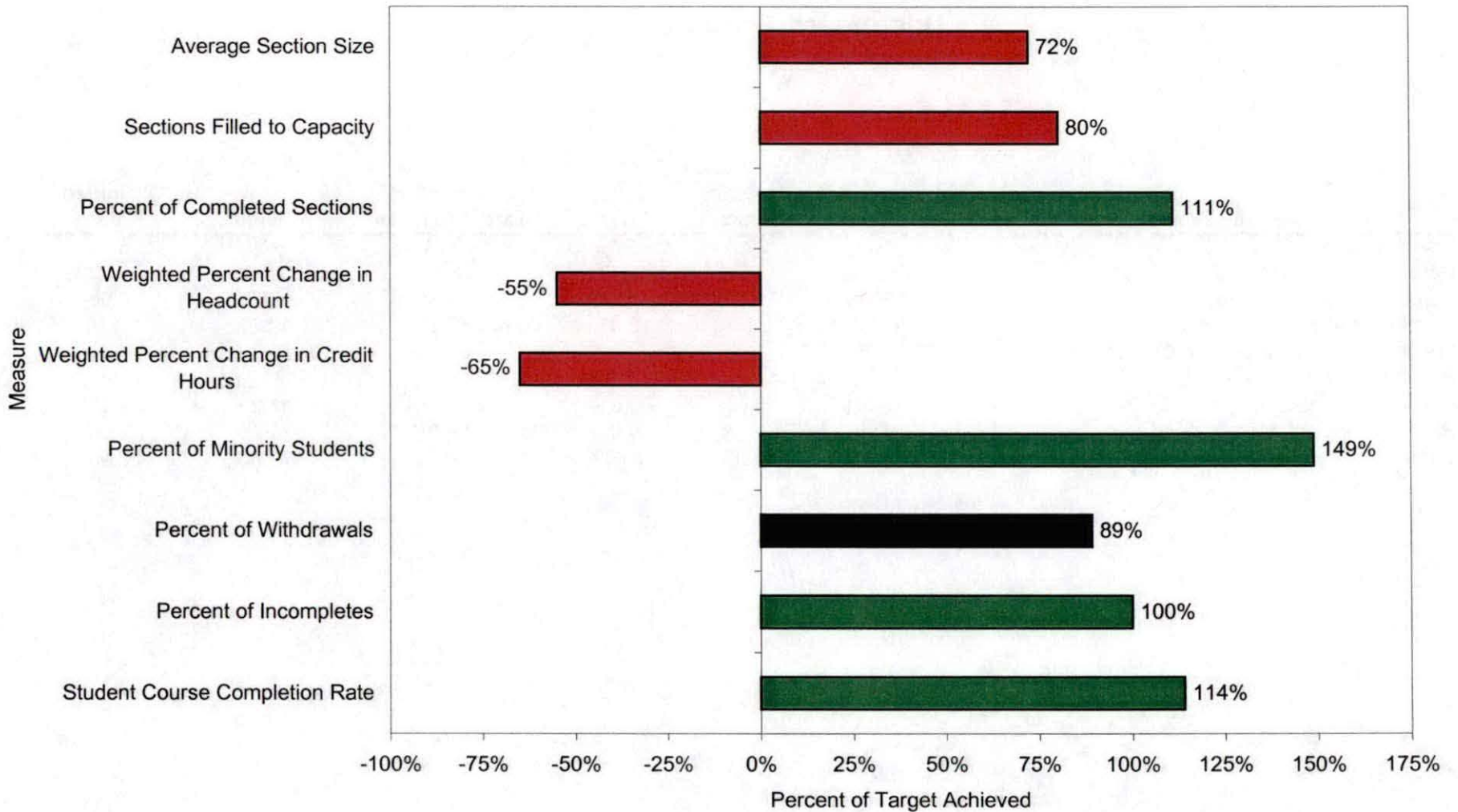
Oakland Community College
Program Dashboard Report
2003-04

Computer Hardware Engineering Technology ECT
Dashboard Score: 6.43

Measures	Current Score	Benchmarks Trouble Score	Target	Percent of Target Achieved	Weight	Weighted Score
Average Section Size	19.5	22.5	27.0	72.2%	8.3%	0.60
Sections Filled to Capacity	72.2%	75.0%	90.0%	80.2%	7.9%	0.63
Percent of Completed Sections	100.0%	75.0%	90.0%	111.1%	8.8%	0.98
Weighted Percent Change in Headcount	-1.1%	0.5%	2.0%	-55.0%	12.7%	-0.70
Weighted Percent Change in Credit Hours	-1.3%	0.5%	2.0%	-65.0%	10.8%	-0.70
Percent of Minority Students	28.0%	16.9%	18.8%	148.9%	6.9%	1.03
Percent of Withdrawals	10.8%	15.0%	0.0%	89.2%	16.2%	1.45
Percent of Incompletes	0.0%	3.0%	0.0%	100.0%	6.8%	0.68
Student Course Completion Rate	85.5%	60.0%	75.0%	114.0%	21.6%	2.46

Oakland Community College
Percent of Target Achieved
2003-04

Computer Hardware Engineering Technology ECT

Measure	Percent of Target Achieved
Average Section Size	72%
Sections Filled to Capacity	80%
Percent of Completed Sections	111%
Weighted Percent Change in Headcount	-55%
Weighted Percent Change in Credit Hours	-65%
Percent of Minority Students	149%
Percent of Withdrawals	89%
Percent of Incompletes	100%
Student Course Completion Rate	114%

Institutional Research Report

Computer Hardware Engineering Technology
Degree and Credit Hour Trends Reports
for
Curriculum Review Committee
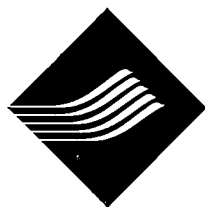
OAKLAND
COMMUNITY
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Electronics Technology Credit Hour Trends Report

ELT Credit Hour Trends Summary

ELT Ten-Year Trend

ELT Three-Year Moving Mean

ELT Rate of Change

College-Wide Ten-Year Trend

OAKLAND COMMUNITY COLLEGE

Degree Trends Report

Computer Hardware Engineering Tech

CHT

2004-05

Oakland Community College
Degree Trends Report
Computer Hardware Engineering Tech (CHT)
## 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 Hardware Engineering Tech (CHT)

- Ten-year trend showing the annual awards conferred in
  Computer Hardware Engineering Tech

- Rate of change in annual awards conferred in
  Computer Hardware Engineering Tech

- The three-year Moving Mean for annual awards conferred in
  Computer Hardware Engineering Tech

- Ten-year trend in awards conferred collegewide.

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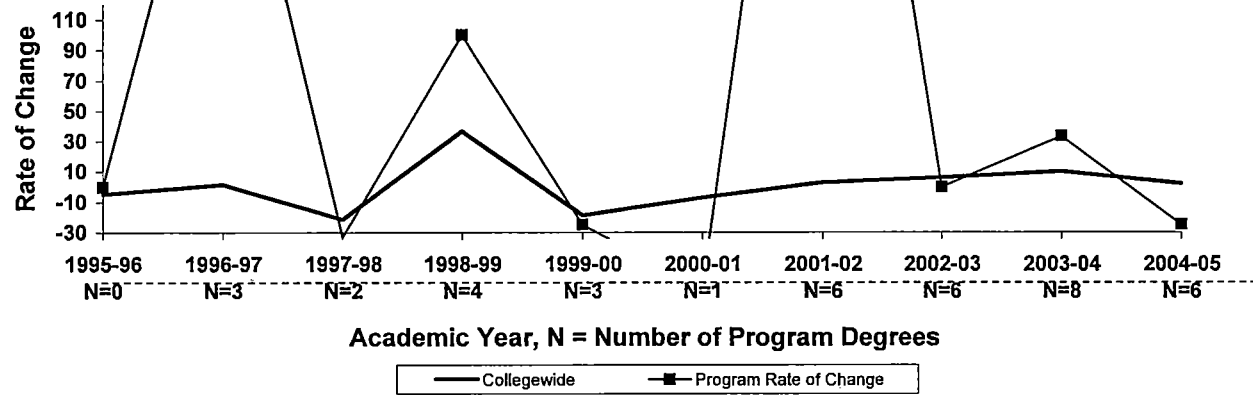at (248) 341-2123.

Oakland Community College
Associate Degrees and Certificates Awarded
Computer Hardware Engineering Tech
1995-96 through 2004-05
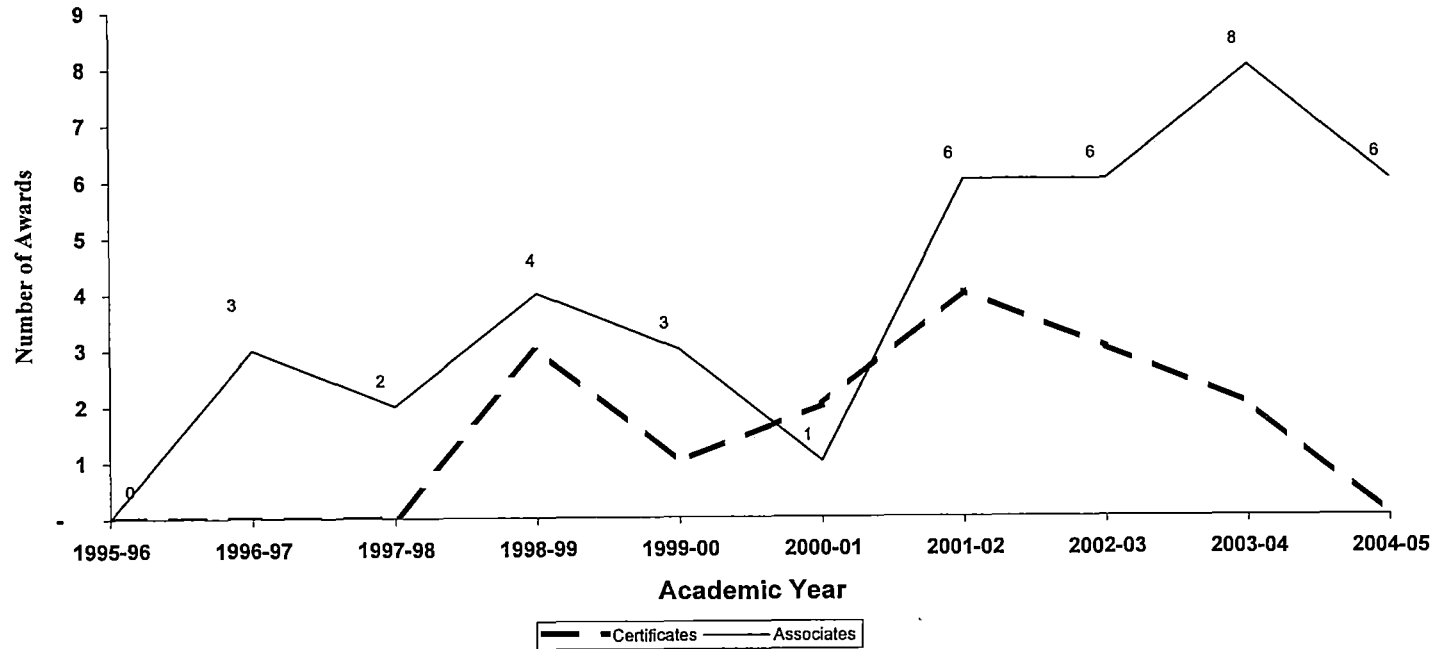
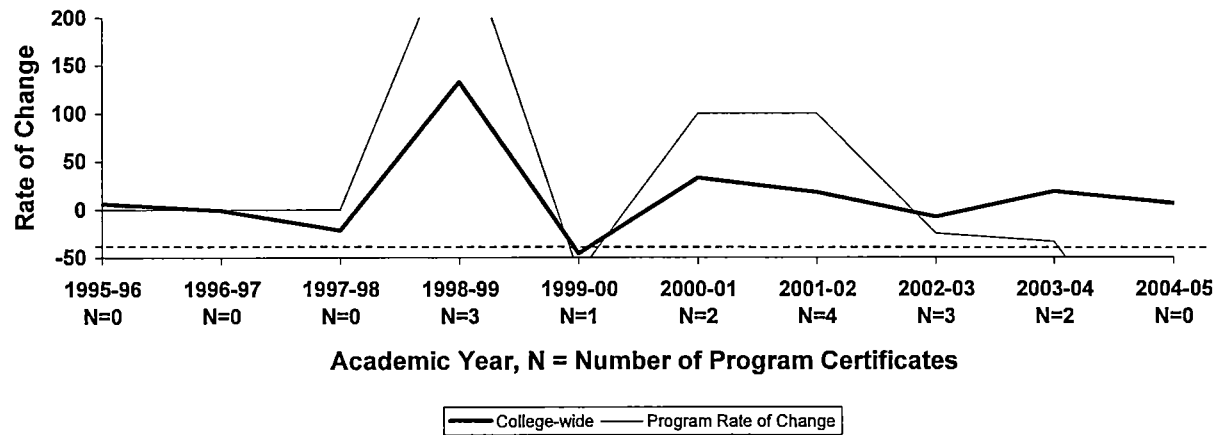| Academic Yr.	Certificates	Associates
1995-96	0	0
1996-97	0	3
1997-98	0	2
1998-99	3	4
1999-00	1	3
2000-01	2	1
2001-02	4	6
2002-03	3	6
2003-04	2	8
2004-05	0	6

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

Associate Degrees

Academic Year, N = Number of Program Degrees

Legend: —— Collegewide —■— Program Rate of Change

Certificates

Academic Year, N = Number of Program Certificates

Legend: —— College-wide —— Program Rate of Change

1/12/2006

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

Associate Degrees

Legend: Actual Degrees, Moving Mean

Y-axis: Associate Degrees Awarded (0–10)
X-axis: Academic Year (1995-96 through 2003-04)

Certificates

Legend: Actual Certificates, Moving Mean

Y-axis: Certificates Awarded (0–5)
X-axis: Academic Year (1995-96 through 2003-04)
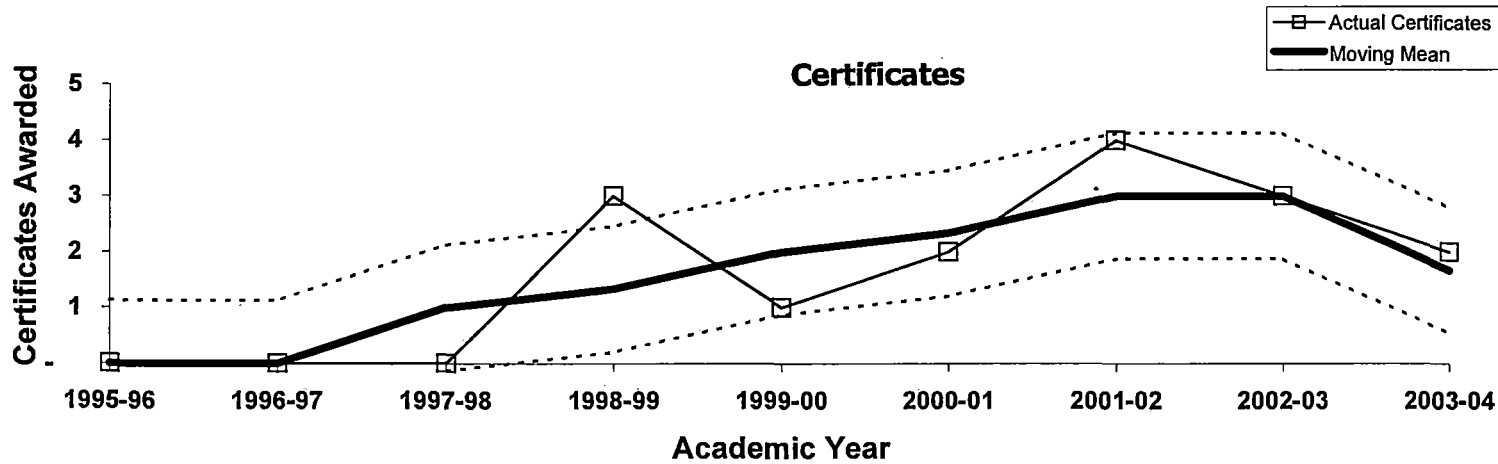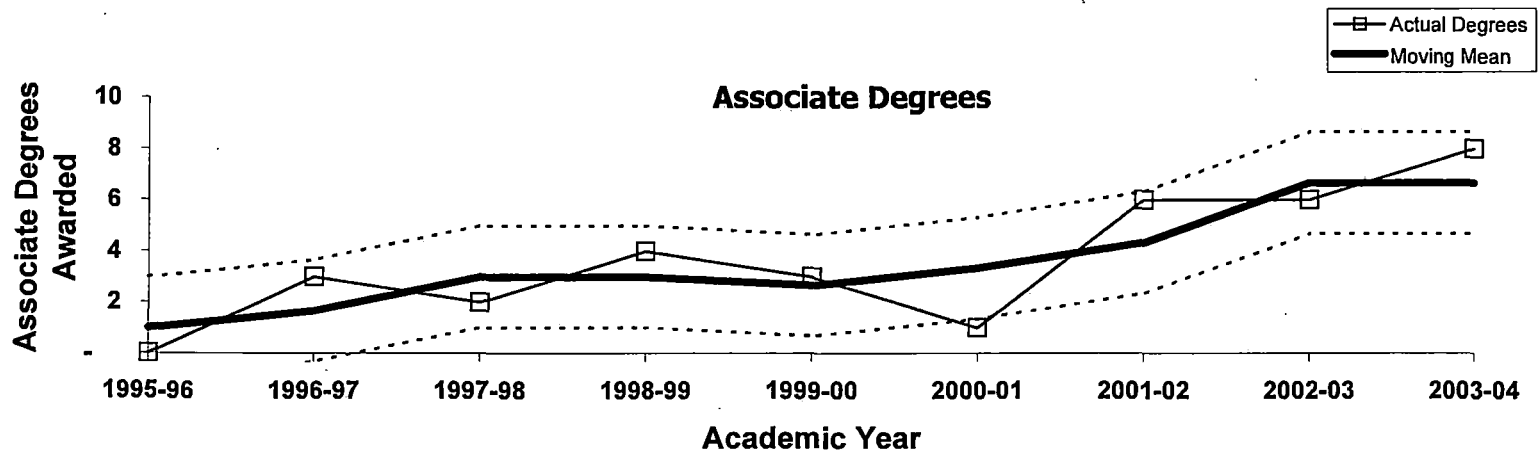
Oakland Community College
Associate Degrees and Certificates Awarded
College-Wide
1995-96 through 2004-05

Number of Awards (y-axis)

Degrees:
- 1995-96: 1,843
- 1996-97: 1,879
- 1997-98: 1,483
- 1998-99: 2,028
- 1999-00: 1,657
- 2000-01: 1,543
- 2001-02: 1,592
- 2002-03: 1,692
- 2003-04: 1,864
- 2004-05: 1,908

Certificates:
- 1995-96: 89
- 1996-97: 88
- 1997-98: 69
- 1998-99: 161
- 1999-00: 88
- 2000-01: 117
- 2001-02: 138
- 2002-03: 127
- 2003-04: 151
- 2004-05: 160

Academic Year

Legend: Certificates — Degrees
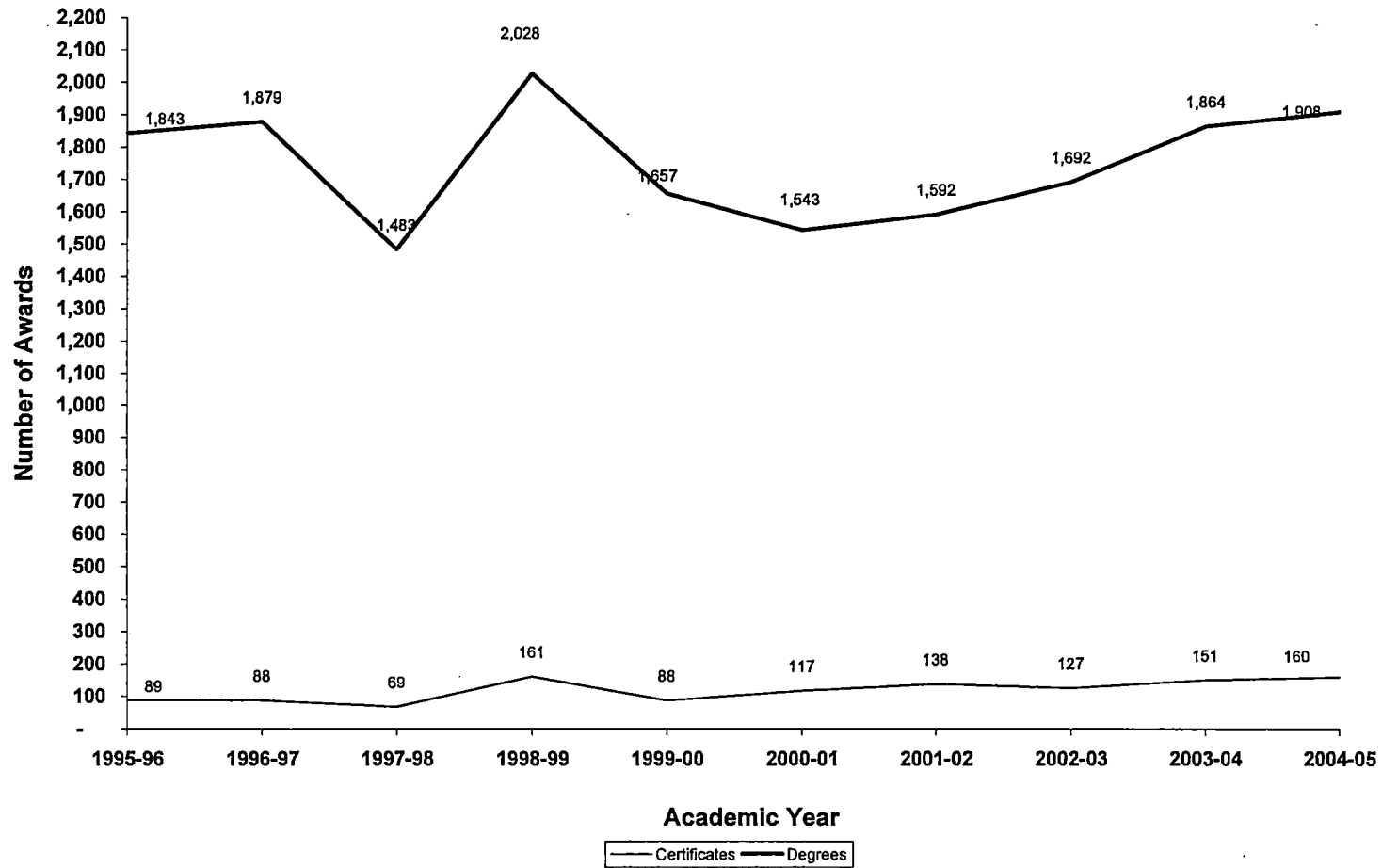
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Credit Hour Trends Report
Computer Info Systems
CIS
2004-05

Prepared by:

Oakland Community College

Office of Institutional Research

January 12, 2006

Oakland Community College
Credit Hour Trends Report
Computer Info Systems
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 Info Systems.

- Graph depicting ten-year trend in student credit hours generated by Computer Info Systems

- Graphs depicting three-year moving mean and rate of change in student credit hours for Computer Info Systems.

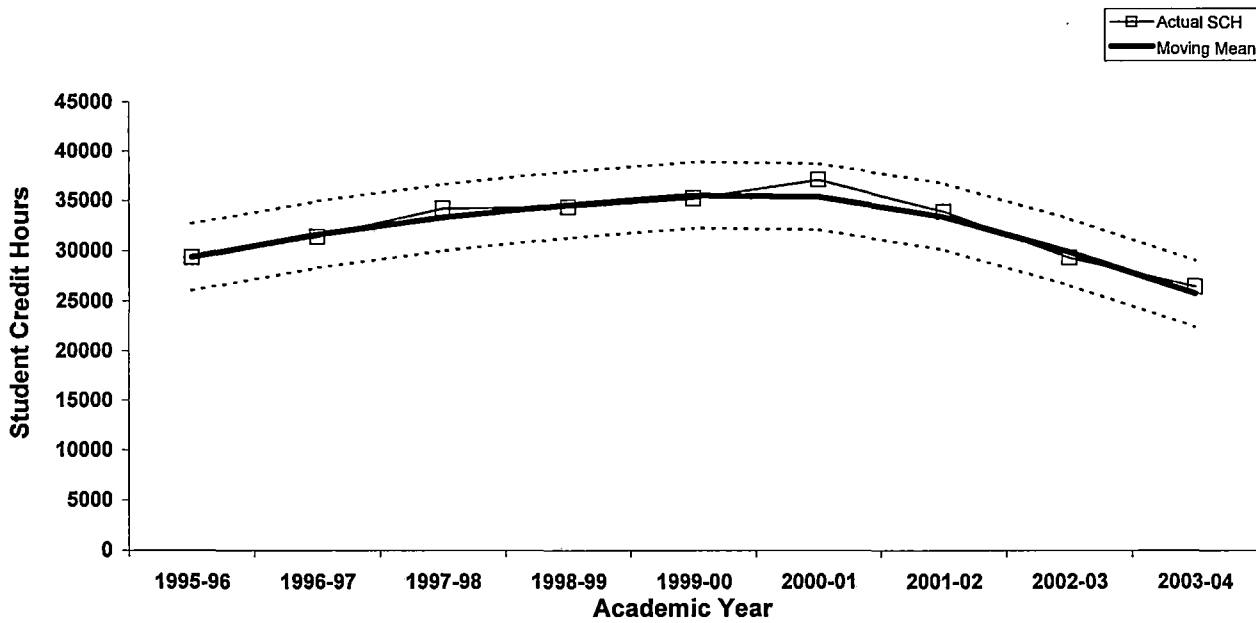- Ten-year trend in annual credit hours generated Collegewide.

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
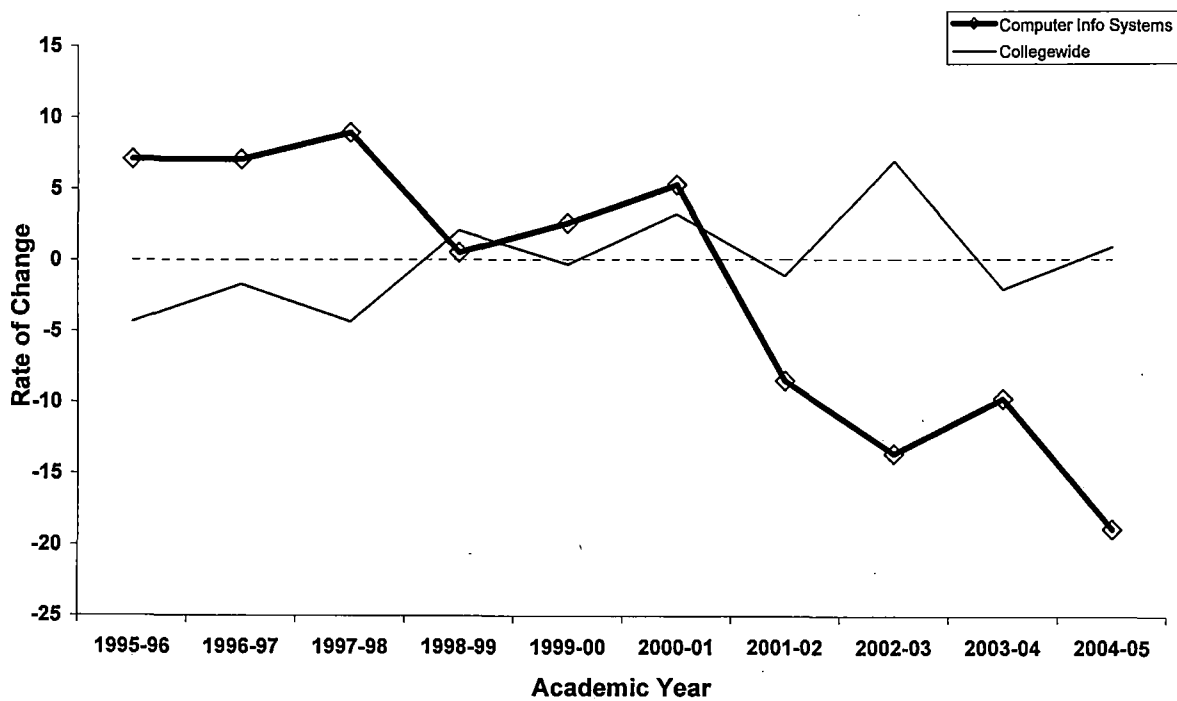## Computer Info Systems
1994-95 through 2004-05

	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 Info Systems	27,380	29,326	31,398	34,198	34,373	35,254	37,107	33,947	29,325	26,456	21,461	-39.1	-21.6
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
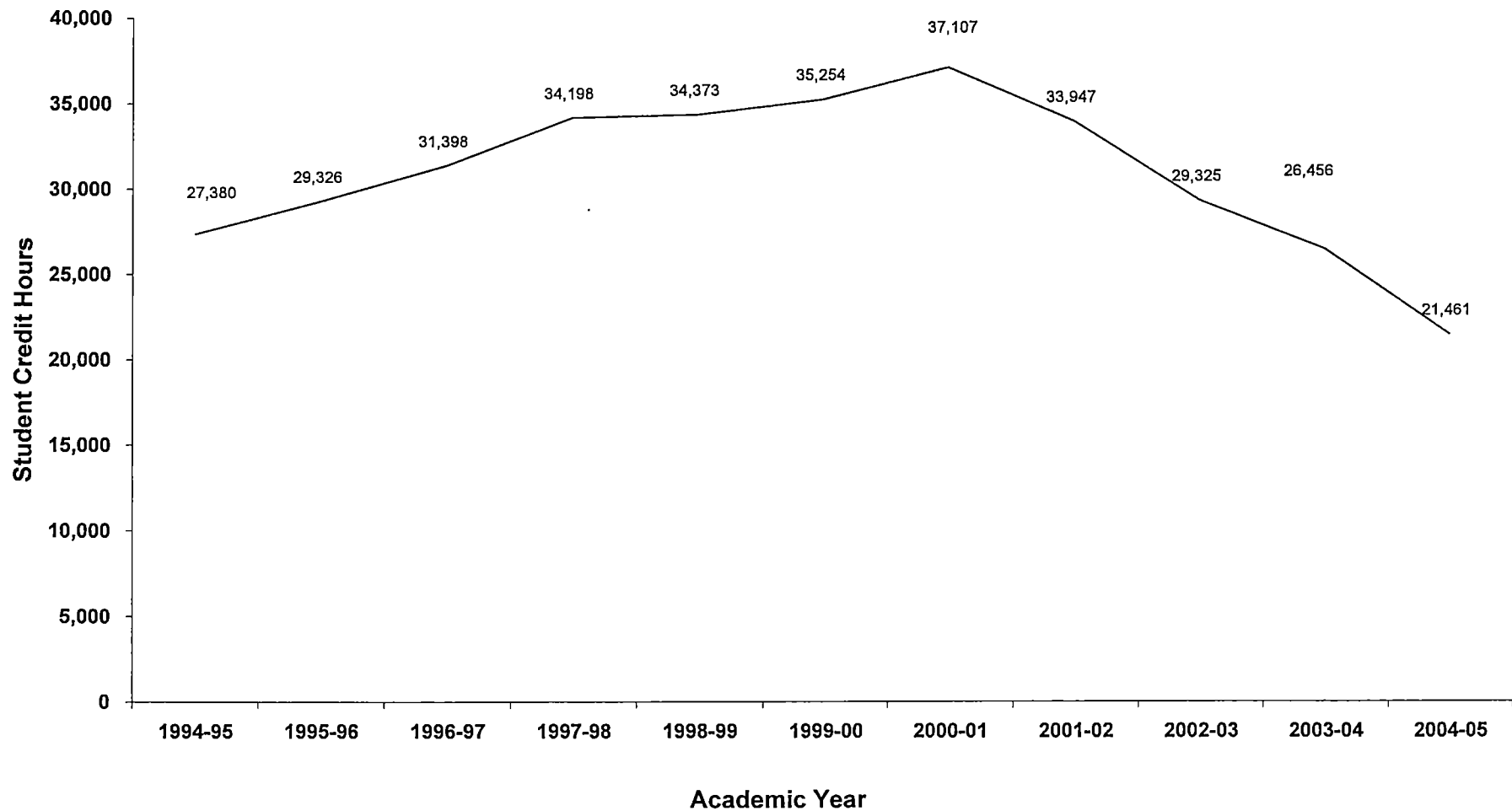
Oakland Community College
Three-Year Moving Mean
Computer Info Systems
1995-96 through 2003-04

Legend:
- Actual SCH
- Moving Mean

(Chart: Student Credit Hours vs Academic Year, 1995-96 through 2003-04)

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

Legend:
- Computer Info Systems
- Collegewide

(Chart: Rate of Change vs Academic Year, 1995-96 through 2004-05)

Oakland Community College
Ten-Year Trend in Student Credit Hours
College-Wide
1995-96 through 2004-05
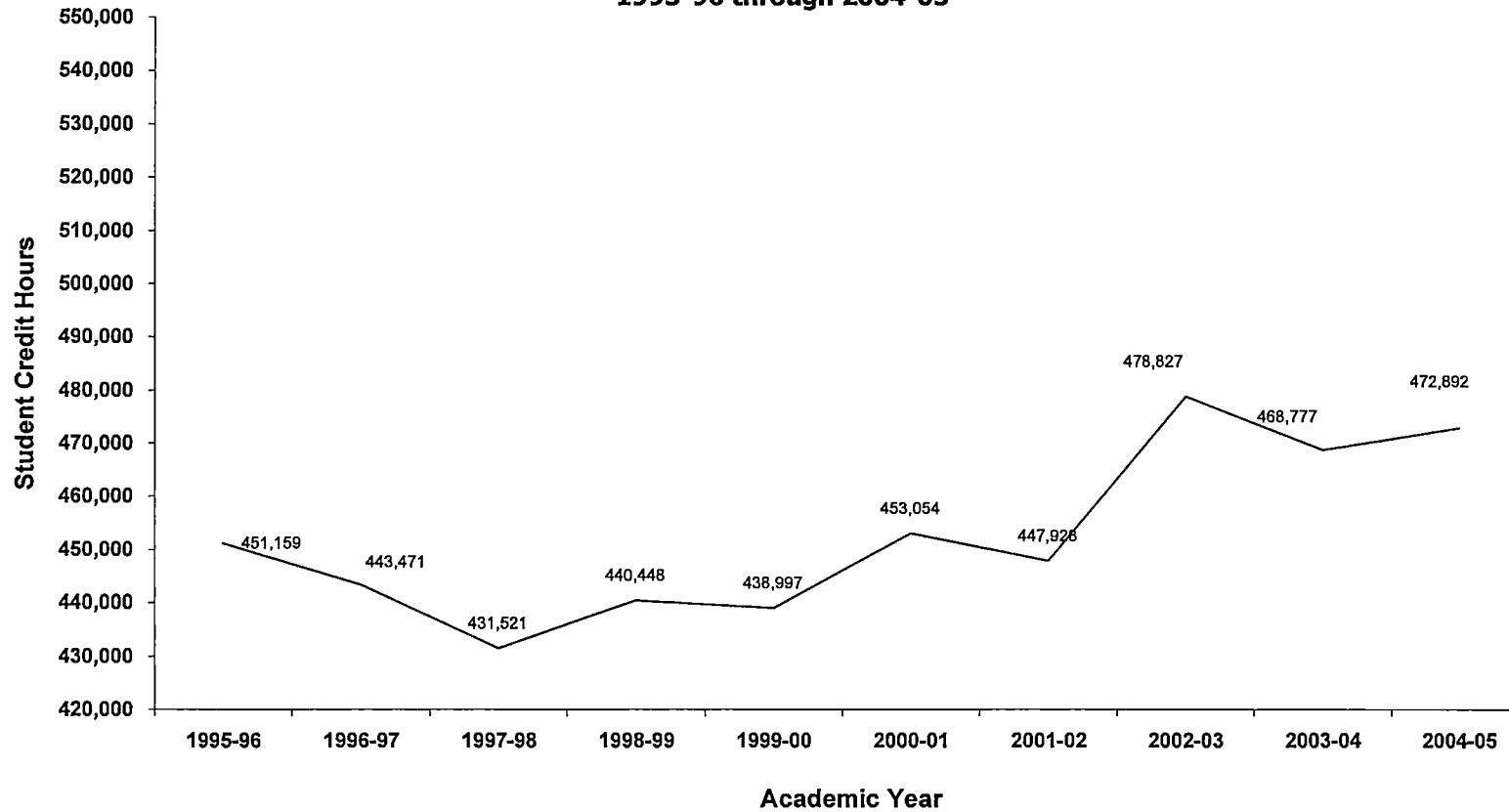
1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
451,159	443,471	431,521	440,448	438,997	453,054	447,928	478,827	468,777	472,892

OAKLAND
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Credit Hour Trends Report
Computer Hardware Eng Tech
ECT
2004-05

Prepared by:

Oakland Community College

Office of Institutional Research

January 12, 2006

Oakland Community College
Credit Hour Trends Report
Computer Hardware Engineering Tech
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.
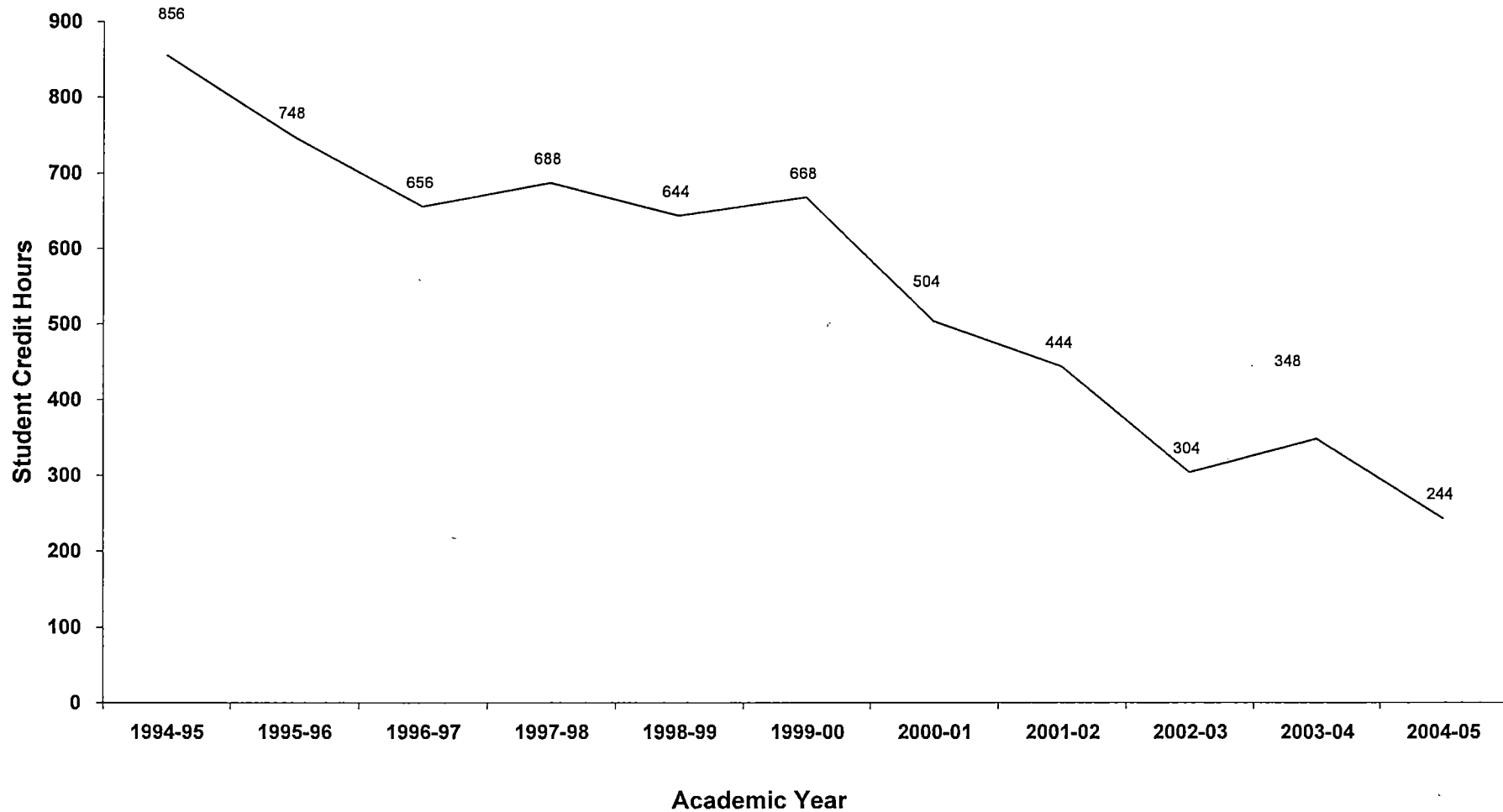
Trends over a specified period of time are illustrated by the following graphs for Computer Hardware Engineering Tech.

- Graph depicting ten-year trend in student credit hours generated by Computer Hardware Engineering Tech

- Graphs depicting three-year moving mean and rate of change in student credit hours for Computer Hardware Engineering Tech.

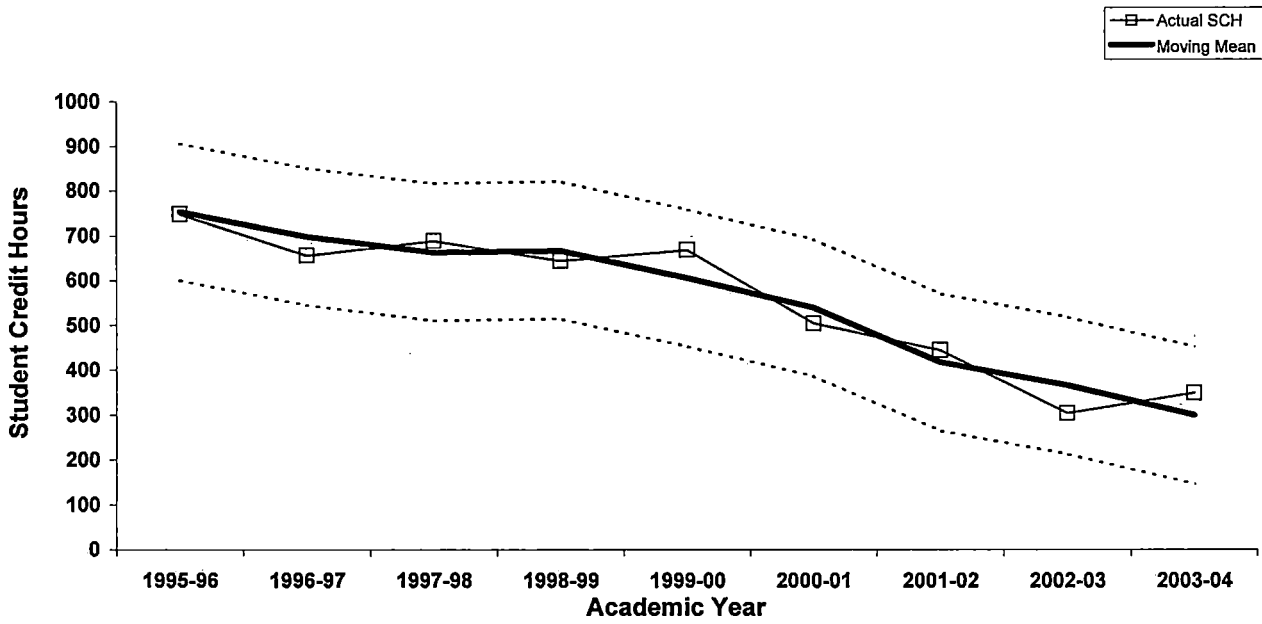- Ten-year trend in annual credit hours generated Collegewide.

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 Hardware Engineering Tech
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 Hardware Engine	856	748	656	688	644	668	504	444	304	348	244	-63.5	-71.5
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

Oakland Community College
Three-Year Moving Mean
Computer Hardware Engineering Tech
1995-96 through 2003-04

Legend:
- Actual SCH
- Moving Mean

Y-axis: Student Credit Hours (0 to 1000)
X-axis: Academic Year (1995-96 through 2003-04)

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

Legend:
- Computer Hardware Engineering Tech
- Collegewide

Y-axis: Rate of Change (-40 to 20)
X-axis: Academic Year (1995-96 through 2004-05)

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

Student Credit Hours

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

Academic Year

1/12/2006
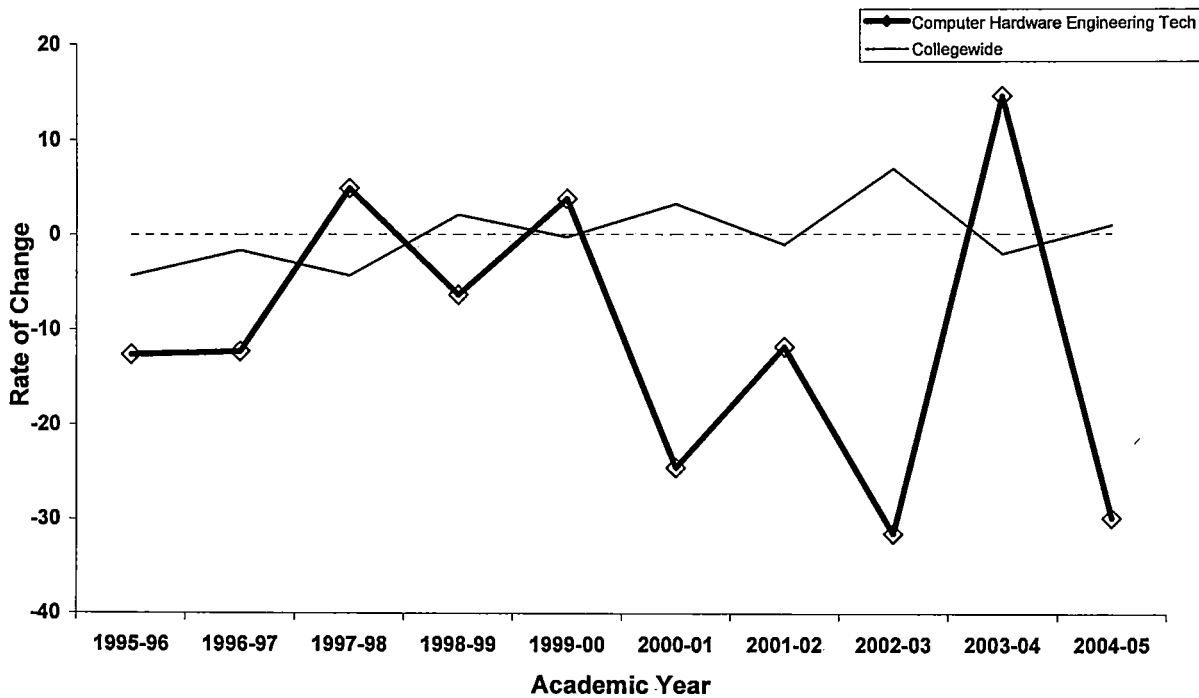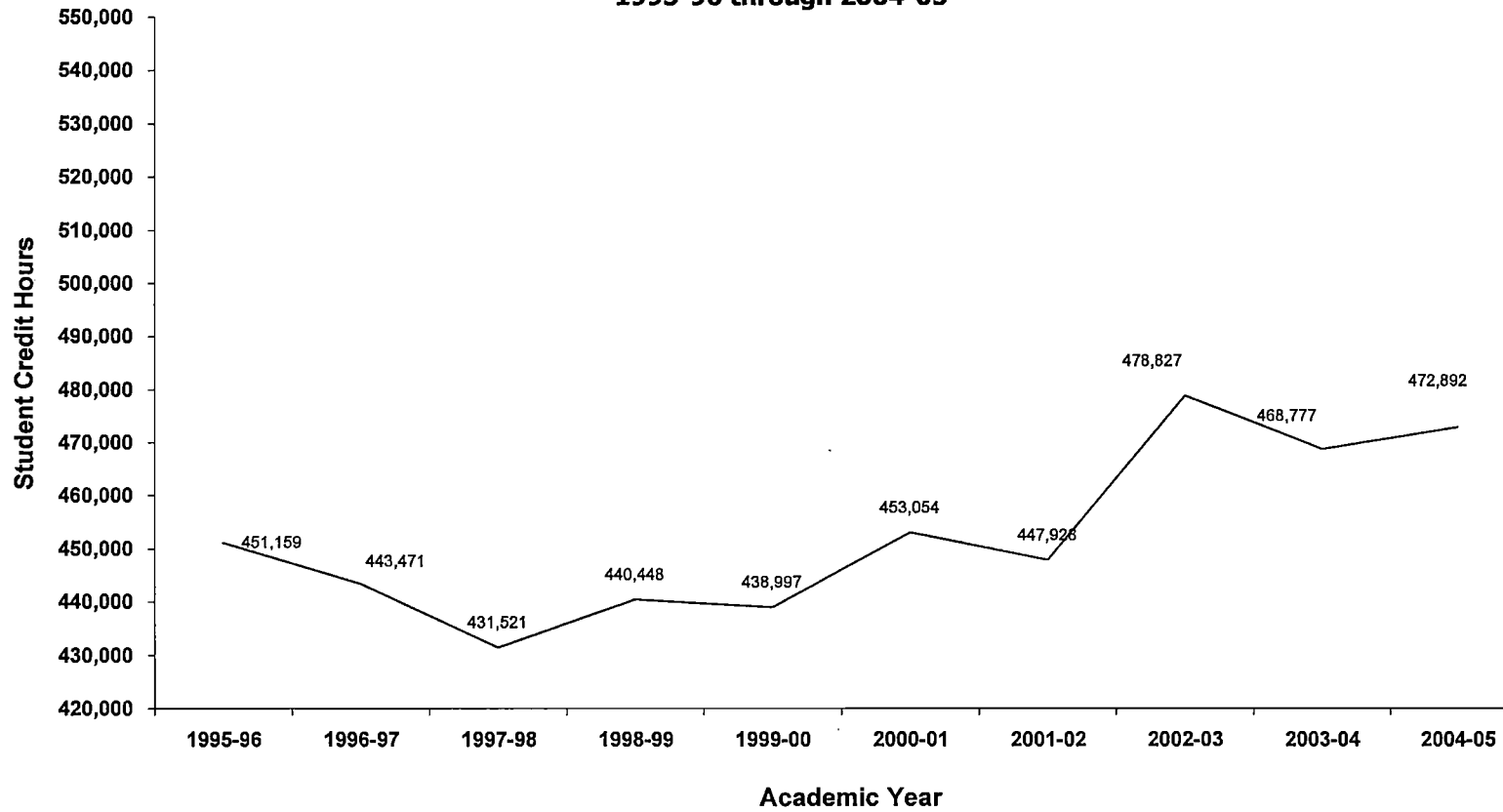
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Credit Hour Trends Report
Electrical/Electronics Tech
EEC
2004-05

Prepared by:

Oakland Community College

Office of Institutional Research

January 12, 2006

Oakland Community College
Credit Hour Trends Report
Electrical/Electronics Tech
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.
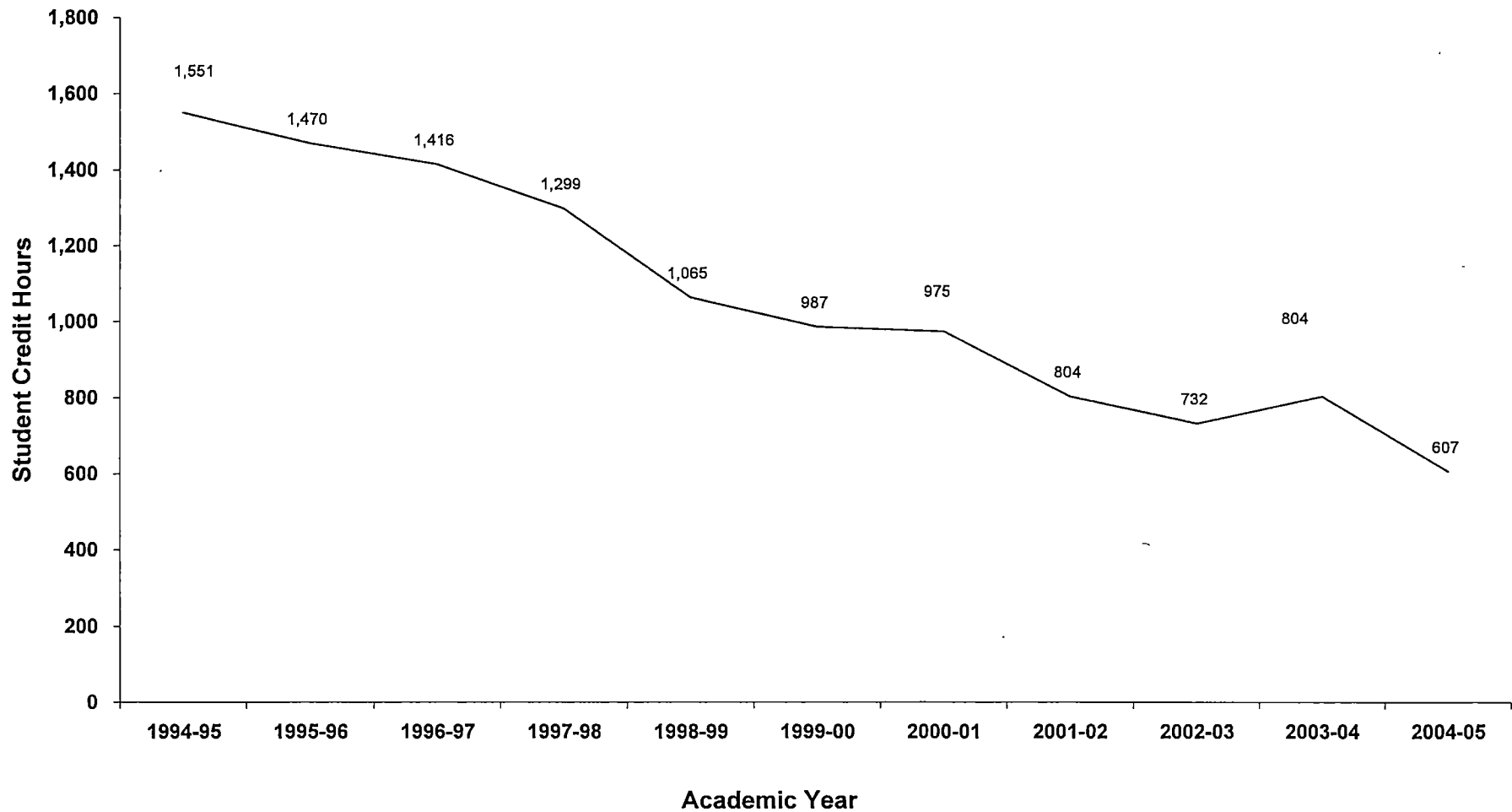
Trends over a specified period of time are illustrated by the following graphs for Electrical/Electronics Tech.

- Graph depicting ten-year trend in student credit hours generated by Electrical/Electronics Tech

- Graphs depicting three-year moving mean and rate of change in student credit hours for Electrical/Electronics Tech.

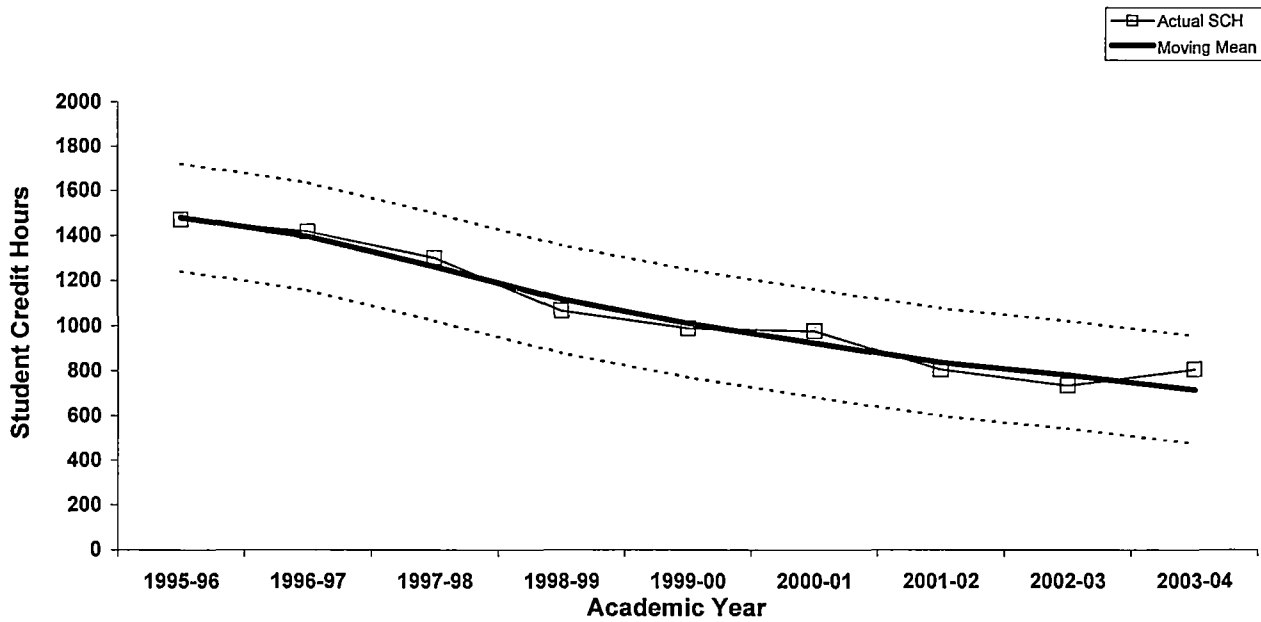- Ten-year trend in annual credit hours generated Collegewide.

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
Electrical/Electronics Tech
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
Electrical/Electronics Tech	1,551	1,470	1,416	1,299	1,065	987	975	804	732	804	607	-38.5	-60.9
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

Academic Year

Oakland Community College
Three-Year Moving Mean
Electrical/Electronics Tech
1995-96 through 2003-04

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

1/12/2006

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

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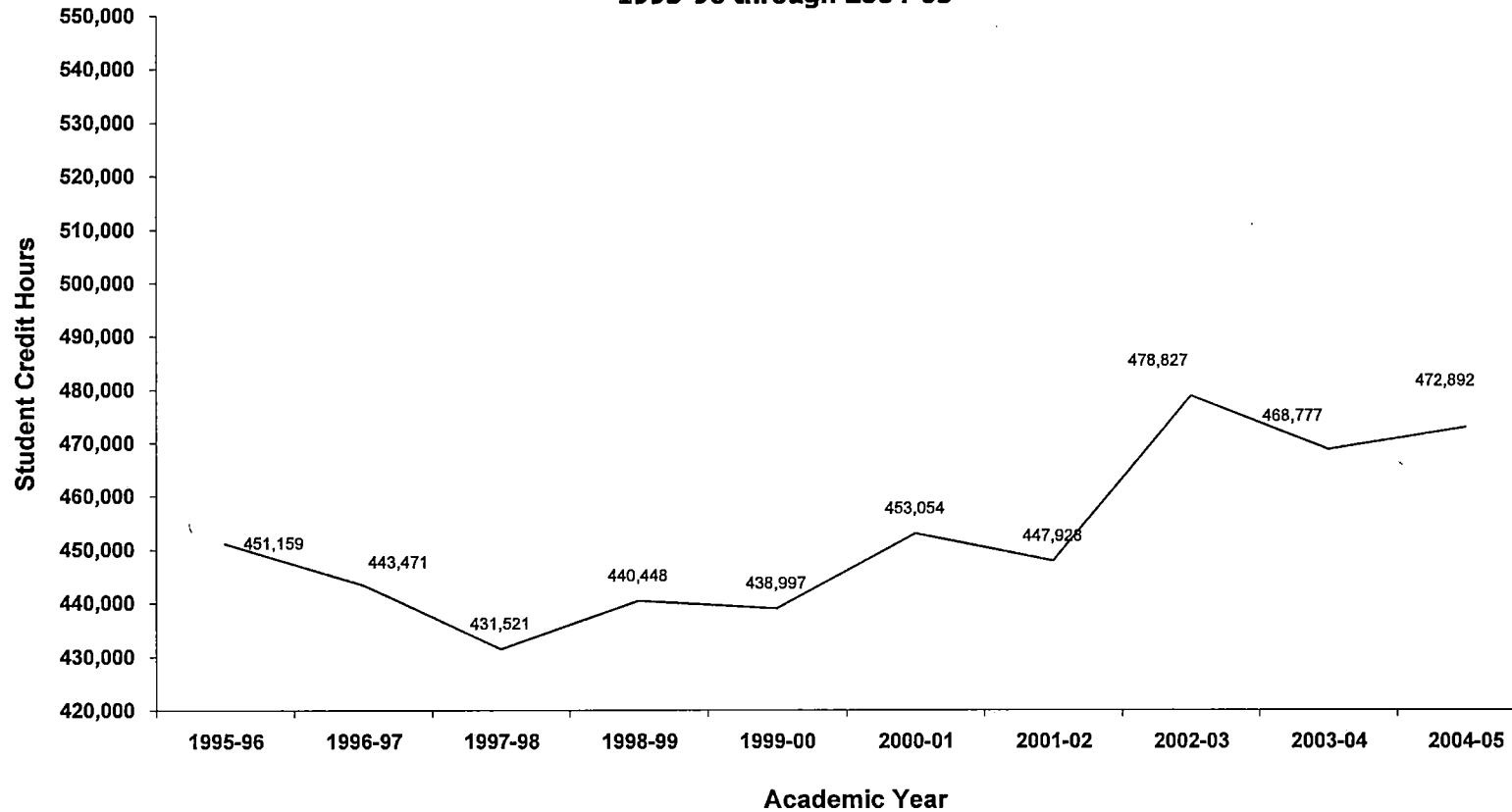
1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
451,159	443,471	431,521	440,448	438,997	453,054	447,928	478,827	468,777	472,892

Academic Year

OAKLAND
COMMUNITY
COLLEGE

Credit Hour Trends Report
Electronics Tech
ELT
2004-05

Oakland Community College
Credit Hour Trends Report
Electronics Tech
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 Electronics Tech.

- Graph depicting ten-year trend in student credit hours generated by Electronics Tech

- Graphs depicting three-year moving mean and rate of change in student credit hours for Electronics Tech.

- 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
Electronics Tech
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
Electronics Tech	324	351	312	279	222	177	66	54	39	72	82	-53.7	-74.7
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
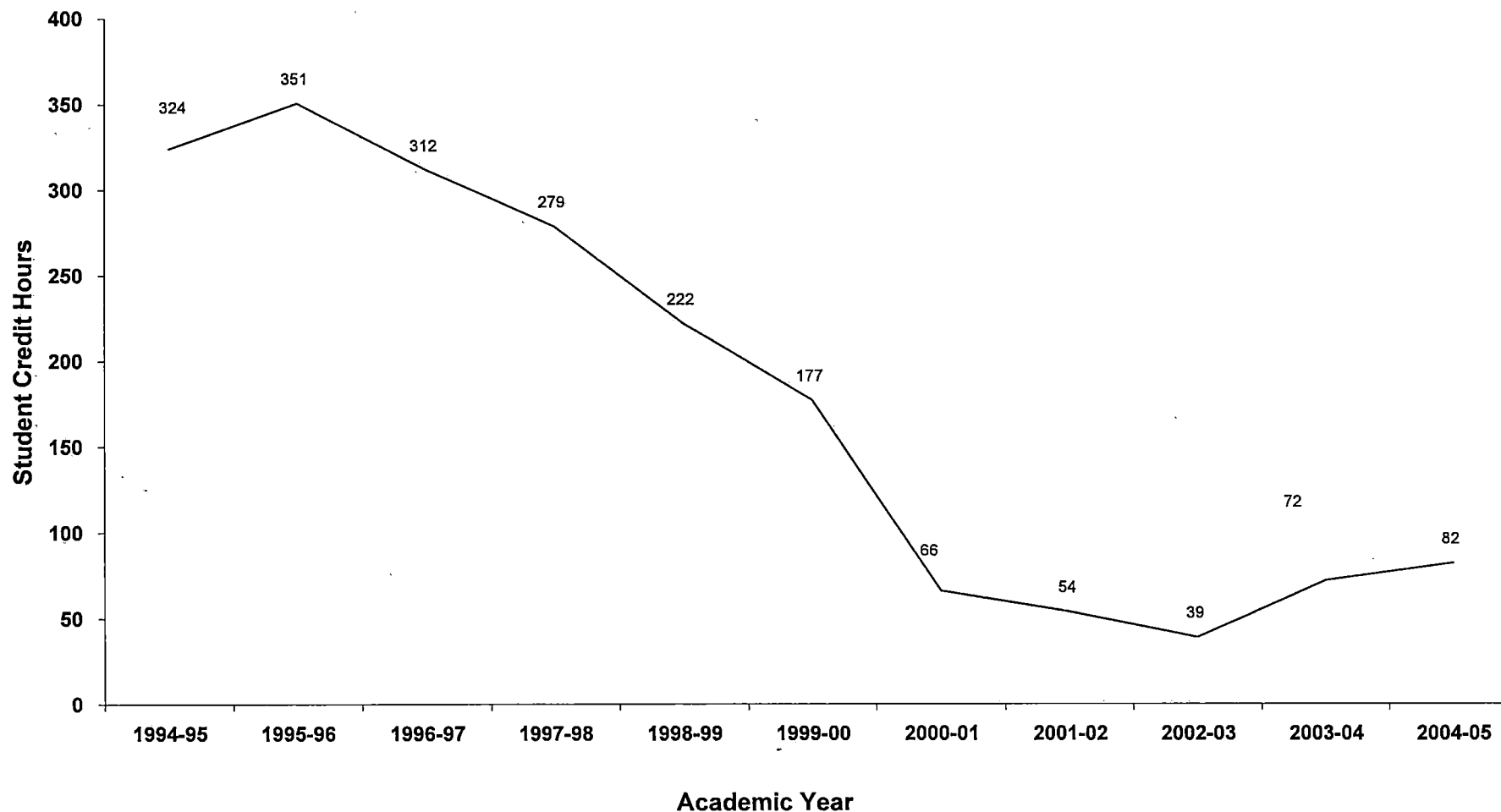
Oakland Community College
Three-Year Moving Mean
Electronics Tech
1995-96 through 2003-04
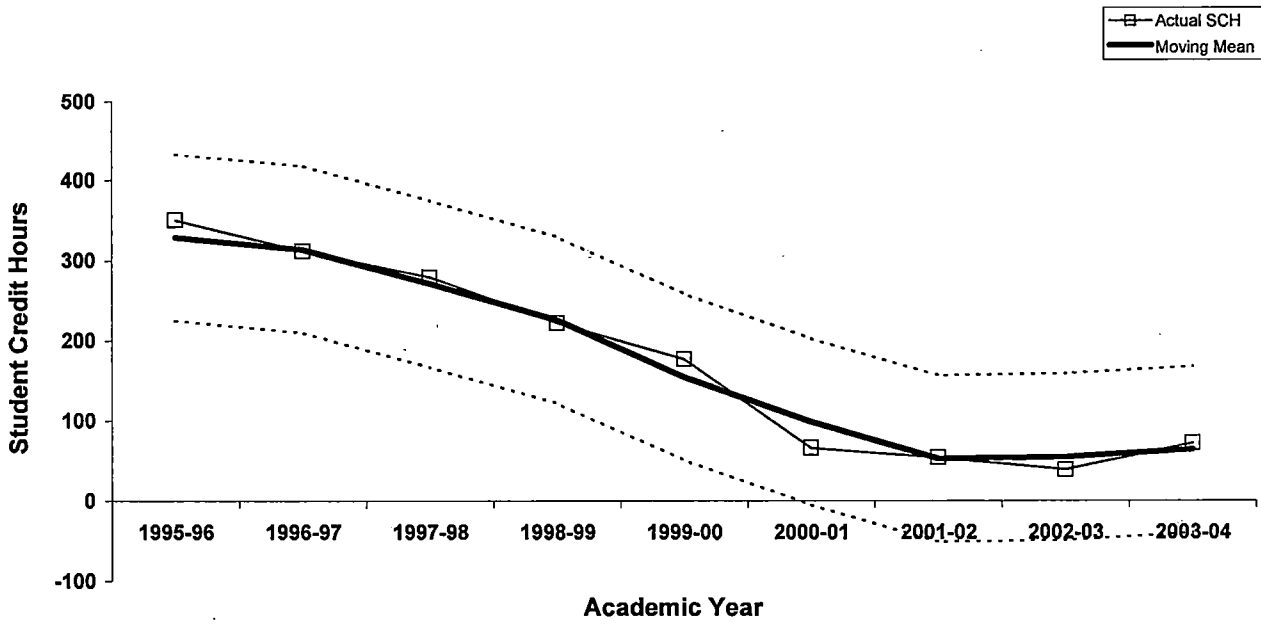
Legend:
- Actual SCH
- Moving Mean

Y-axis: Student Credit Hours (-100 to 500)
X-axis: Academic Year (1995-96 through 2003-04)

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

Legend:
- Electronics Tech
- Collegewide

Y-axis: Rate of Change (-80 to 100)
X-axis: Academic Year (1995-96 through 2004-05)

1/12/2006
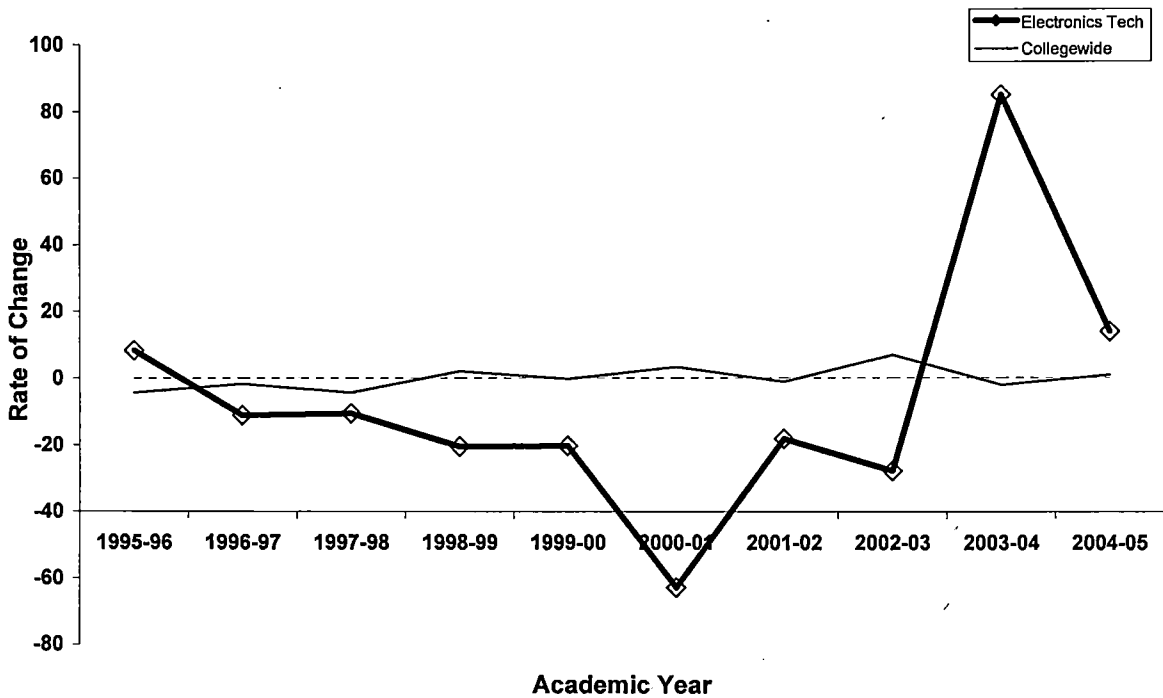
Oakland Community College
Ten-Year Trend in Student Credit Hours
College-Wide
1995-96 through 2004-05
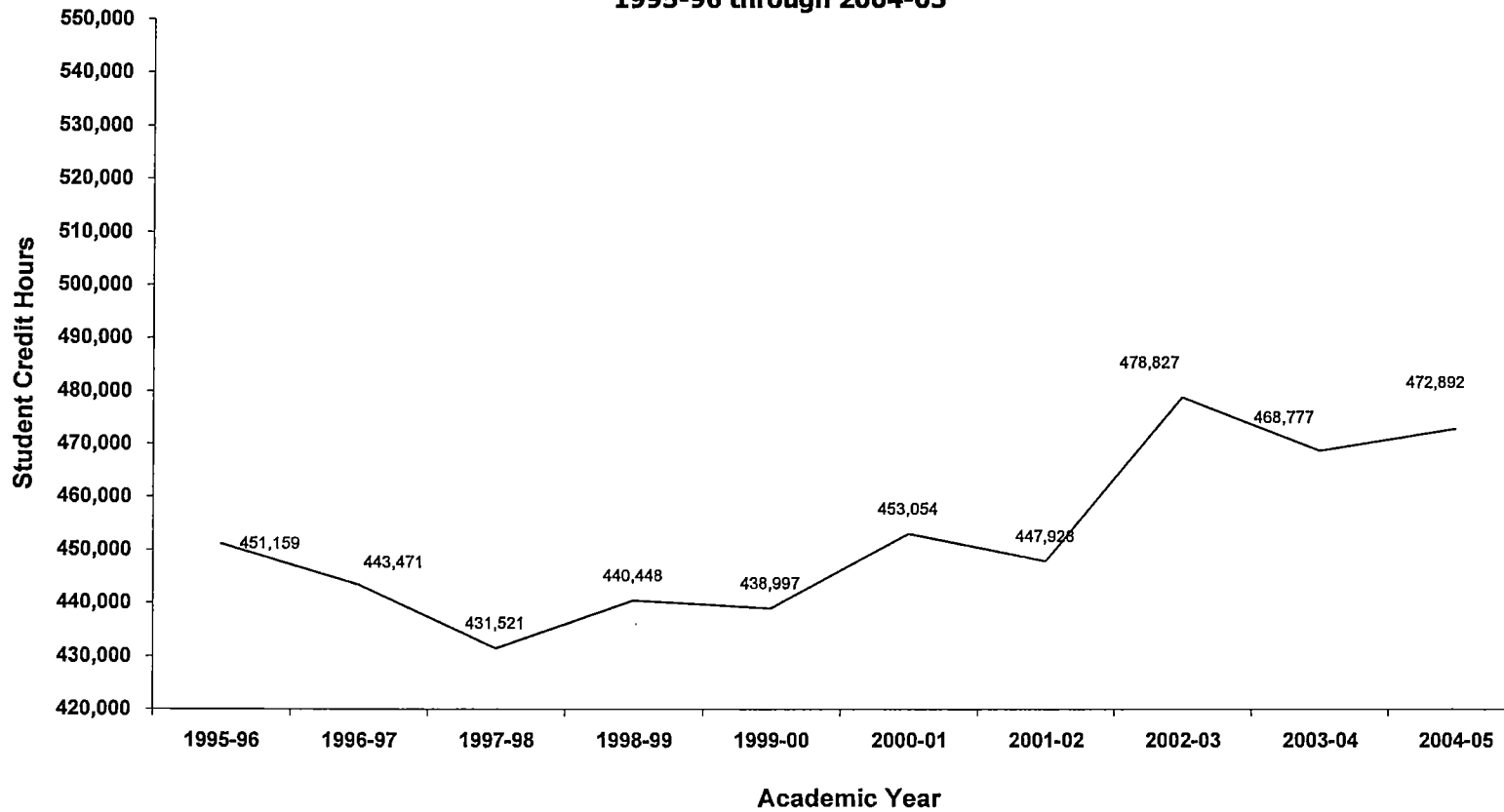
1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05
451,159	443,471	431,521	440,448	438,997	453,054	447,928	478,827	468,777	472,892

Occupational Projections
(2004 – 2014)

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 SOC codes is highly dependent upon the way in which the U.S. Department of Labor groups specific occupations.

When possible, projections are presented at four distinct levels based on U.S. Department of Labor Standard Occupational Code (SOC) groups e.g. Major (N = 23), Minor (N = 89), Broad (N = 396), and Detailed (N = 710).

Projections are highly 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.

Source for 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 2004.
- Five Year: Number of projected jobs in 2009.
- Ten Year: Number of projected jobs in 2014.
- New Jobs: Projected number of new jobs between 2004 and 2014.
- Replacement Jobs: Projected number of replacement jobs between 2004 and 2014.
- % New Jobs: Percent of projected new jobs in 2014 using 2004 as the base year.
- % Replacement Jobs: Percent of projected replacement jobs in 2014 using 2004 as the base year.
- % New and Replacement Jobs: Percent of projected new and replacement jobs in 2014 using 2004 as the base year.
- Earnings: Average annual earnings within the SOC code in 2004.

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.

Computer Hardware Engineering Technology Related Occupations (2004 - 2014)
SOC Detail Group

SOC Code	Name	Base Year	Five Year	Ten Year	New Jobs	Rplmnt Jobs	% New Jobs	% Rplmnt Jobs	% New && Rplmnt	Earnings
15-1041	Computer support specialists	7,390	8,167	9,141	1,751	915	23.7%	12.4%	36.1%	$58,543
15-1081	Network systems and data communications analysts	3,391	3,867	4,439	1,049	388	30.9%	11.4%	42.4%	$82,590
17-2061	Computer hardware engineers	573	569	599	26	95	4.5%	16.6%	21.1%	$116,218
43-9011	Computer operators	2,177	1,930	1,700	-477	891	-21.9%	40.9%	19.0%	$44,746
49-2011	Computer, automated teller, and office machine repairers	2,673	2,607	2,635	-39	347	-1.5%	13.0%	11.5%	$52,461
Totals:		16,204	17,140	18,514	2,310	2,636				

Program Assessment Plan
Computer Hardware Engineering Technology

Catalog Description
This Associate in Applied Science Degree is designed to provide the student with learning experiences that will develop skills required to install, diagnose problems and repair micro-processor control devices and peripheral equipment. Equipment will include items such as personal and business computers, monitors, terminals, printers, disk drives, card and magnetic strip readers and additional hardware. The program also offers preparation for the A+ Certification exam and gives the graduate or certificate recipient the opportunity to function as a registered Certified Electronics Technician upon successfully passing the International Society of Certified Electronics Technicians examination (ISCET). Once certified, the student is eligible to take a journeyman's test in ten specialty areas of Computer, Video, Consumer, Industrial, FCC legal, Medical, Audio, Communications, MATV and Radar Electronics. A journeyman certified technician must also have four or more years of education and/or experience in electronics.

Program Statement of Purpose
Provide fundamental, quality and student-centered learning opportunities for individuals seeking transfer and/or entry-level employment in computers.

Learning Outcome
Graduates will have acquired the knowledge and skills necessary in preparation to sit for the A+ and Net+ certification examinations.

Benchmark 1
80% of students will be prepared to pass the A+ and Net+ exams.

Assessment Method 1
Sampling of student oral, written, and practical responses from specific class laboratories in ECT 2150 and ECT 2160. In oral, written and practical mediums, students will be able to describe properly functioning PC Desktop and Server systems.

Benchmark to be Assessed	5/1/2005
Assessment Findings Sent to OAE Date 1	6/1/2005

Learning Outcome
Students will develop oral and written technical communications skills.

Benchmark 1
Students will achieve 80% in evaluation by faculty against technical writing standards.

Assessment Method 1
All graduates must pass ENG 1450, Writing & Reading for Problem Solving.

Benchmark to be Assessed	5/1/2005
Assessment Findings Sent to OAE	6/1/2005

Learning Outcome
Graduates will have acquired the knowledge and non-technical problem-solving and communication skills necessary to enable them to transfer to other institutions.

Benchmark 1
Transfer institutions rate the program courses as transferable to their institution greater than 80%.

Assessment Method 1
Survey transfer institutions to assess the appropriateness of instructional content to provide optimum portability of credits and knowledge, and identify new transfer opportunities.

Benchmark to be Assessed   5/1/2005
Assessment Findings Sent to OAE   6/1/2005

Learning Outcome
Students will learn steps to troubleshoot and correct computer hardware and operating system problems.

Benchmark 1
85% of 13 labs and lab reports in ECT 2150 will be completed with a grade of 90% or higher.

Assessment Method 1
Completed labs and lab reports submitted.

Benchmark to be Assessed   12/1/2005
Assessment **Findings Sent to OAE**   1/1/2006

Learning Outcome
Students will learn steps to create networks and assemble a server.

Benchmark 1
85% of 13 labs and lab reports in ECT 2160 will be completed with a grade of 90% or higher.

Assessment Method 1
Completed labs and lab reports submitted.

Benchmark to be Assessed   4/1/2005
Assessment Findings Sent to OAE 1   5/1/2005

Learning Outcome
Graduates will have acquired the knowledge and skills necessary to sit for the Electronics Associate Level Exam administered by the International Society for the Certification of Electronics Technicians (ISCET).

Benchmark 1
80% of students will be prepared to pass the Associate Level ISCET exam.

Assessment Method 1
An average score of at least 80% in oral or written activities in courses: EEC 1020, EEC 1040, EEC 1050, EEC 1270, EEC 1350, ELT 2070, ELT 2060 and ECT 2080.

Benchmark to be Assessed   5/1/2005
Assessment Findings Sent to OAE   6/1/2005

Summary of Program Assessment Results
Computer Hardware Engineering Technology

Catalog Description
This Associate in Applied Science Degree is designed to provide the student with learning experiences that will develop skills required to install, diagnose problems and repair micro-processor control devices and peripheral equipment. Equipment will include items such as personal and business computers, monitors, terminals, printers, disk drives, card and magnetic strip readers and additional hardware. The program also offers preparation for the A+ Certification exam and gives the graduate or certificate recipient the opportunity to function as a registered Certified Electronics Technician upon successfully passing the International Society of Certified Electronics Technicians examination (ISCET). Once certified, the student is eligible to take a journeyman's test in ten specialty areas of Computer, Video, Consumer, Industrial, FCC legal, Medical, Audio, Communications, MATV and Radar Electronics. A journeyman certified technician must also have four or more years of education and/or experience in electronics.

Program Statement of Purpose
Provide fundamental, quality and student-centered learning opportunities for individuals seeking transfer and/or entry-level employment in computers.

Learning Outcome
Students will develop oral and written technical communications skills.

Benchmark 1
Students will achieve 80% in evaluation by faculty against technical writing standards.

Assessment Method 1
All graduates must pass ENG 1450, Writing & Reading for Problem Solving.

Benchmark Scheduled To Be Assessed: 5/1/2004

Assessment Results Sent To Office of Assessment & Effectiveness: 6/1/2004

Findings 1
Assessment not implemented.

Learning Outcome
Graduates will have acquired the knowledge and non-technical problem-solving and communication skills necessary to enable them to transfer to other institutions.

Benchmark 1
Transfer institutions rate the program courses as transferable to their institution greater than 80%.

Assessment Method 1
Survey transfer institutions to assess the appropriateness of instructional content to provide optimum portability of credits and knowledge, and identify new transfer opportunities.

Benchmark Scheduled To Be Assessed: 5/1/2004

Assessment Results Sent To Office of Assessment & Effectiveness: 6/1/2004

Findings 1
Assessment not implemented.

Learning Outcome
Graduates will have acquired the knowledge and skills necessary to sit for the Electronics Associate Level
Exam administered by the International Society for the Certification of Electronics Technicians (ISCET).

Benchmark 1
80% of students will be prepared to pass the Associate Level ISCET exam.

Assessment Method 1
An average score of at least 80% in oral or written activities in courses: EEC 1020, EEC 1040, EEC 1050,
EEC 1270, EEC 1350, ELT 2070, ELT 2060 and ECT 2080.

Benchmark Scheduled To Be Assessed: 5/1/2004

Assessment Results Sent To Office of Assessment & Effectiveness: 6/1/2004

Findings 1
Assessment not implemented.

Learning Outcome
Graduates will have acquired the knowledge and skills necessary in preparation to sit for the A+ and Net+ certification examinations.

Benchmark 1
80% of students will be prepared to pass the A+ and Net+ exams.

Assessment Method 1
Sampling of student oral, written, and practical responses from specific class laboratories in ECT 2150 and ECT 2160. In oral, written and practical mediums, students will be able to describe properly functioning PC Desktop and Server systems.

Benchmark Scheduled To Be Assessed: 5/1/2004

Assessment Results Sent To Office of Assessment & Effectiveness: 6/1/2004

Findings 1
Assessment not implemented.

Learning Outcome
Students will learn steps to troubleshoot and correct computer hardware and operating system problems.

Benchmark 1
85% of 13 labs and lab reports in ECT 2150 will be completed with a grade of 90% or higher.

Assessment Method 1
Completed labs and lab reports submitted.

Benchmark Scheduled To Be Assessed: 12/1/2004

Assessment Results Sent To Office of Assessment & Effectiveness: 1/1/2005

Findings 1
Of 14 students - 87% of assigned labs were completed, 92% of written lab reports exceeded benchmark grade of 90%. Benchmark achieved, no further action is required at this time. Plan to continue assessing this benchmark for 2005-2006.

Learning Outcome
Students will learn steps to create networks and assemble a server.

Benchmark 1
85% of 13 labs and lab reports in ECT 2160 will be completed with a grade of 90% or higher.

Assessment Method 1
Completed labs and lab reports submitted.

Benchmark Scheduled To Be Assessed: 4/1/2004

Assessment Results Sent To Office of Assessment & Effectiveness: 5/1/2004

Findings 1
Of 17 students - 92% of assigned labs were completed, 88% of written lab reports exceeded benchmark grade of 90%. Benchmark achieved, no further action is required at this time. Plan to continue assessing this benchmark for 2005-2006.

OAKLAND COMMUNITY COLLEGE

TO: Curriculum Review Committee
FROM: Dr. Robert A. Powell
SUBJECT: Comparable Courses/Programs and Trends for the CHT Program
DATE: February 15, 2006

To date, there are six community colleges defined as Very Large Suburban Community Colleges.[1] Their attributes include:

- Enrolling more than 7500 students
- Being public colleges with a suburban campus located near a major city less populated than urban areas
- Enrolling students who have transportation into the city which can take advantage of a diversity of cultural events

For purposes of this review, the Very Large Suburban Community College must also embrace an electronics curriculum.

1) OAKLAND COMMUNITY COLLEGE
- The program description has already been addressed at the onset of this review.

The following describes observations, similarities and differences in the electronics programs at five (5) other community colleges in the State of Michigan as they relate to the Electronics Program at Oakland Community Colleges.

2) HENRY FORD COMMUNITY COLLEGE

SIMILAR
- AS Degree (63 cr), Certificate (38 cr)

DIFFERENT
- Recently combined DC Fundamentals (3 cr) and AC Fundamentals (3 cr) into one (4 cr) class
- Incorporates PLC's and motor control
- Incorporates a Co-op
- Incorporates hydraulics, pneumatics, technical physics as required supportive

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[1] Source: Peterson's College Handbook, 2003

1

Plse see attached

G. OUTCOMES ASSESSMENT

Coordinator: Complete this form after reviewing your most recent Program Assessment Plan.

1. How have you used the findings from your Program Assessment to improve your program?

    Yes - see previous section

2. What revisions to your Program Assessment Plan would you suggest?

3. Discuss the SAGE findings that apply to the instruction in your Program.
    Obtain these findings from the Office of Assessment and Effectiveness.

OUTCOMES ASSESSMENT REVIEW SUMMARY:

Coordinator: Obtain the most recent copy of your Program Assessment from the Office of Assessment and Effectiveness. Please attach it to your Summary Report.

Program Assessment Plan
Computer Hardware Engineering Technology

Catalog Description
This Associate in Applied Science Degree is designed to provide the student with learning experiences that will develop skills required to install, diagnose problems and repair micro-processor control devices and peripheral equipment. Equipment will include items such as personal and business computers, monitors, terminals, printers, disk drives, and additional hardware. The program also offers preparation for the A+ Certification exam which allows the graduate or certificate recipient the opportunity to function as a registered Certified Electronics Technician upon successfully passing the International Society of Certified Electronics Technicians examination (ISCET). Once certified, the student is eligible to sit for a journeyman's test in one (1) of eight (8) specialty areas of Computer, Video, Consumer, Industrial, FCC legal, Medical, Audio, and Communications. To qualify to sit for a journeyman exam, an existing certified technician must have acquired four or more years of education and/or experience in the electronics field.

Statement of Purpose
Provide fundamental, quality and student-centered learning opportunities for individuals seeking transfer and/or entry-level employment in desktop computer 1) upgrades, 2) preventative maintenance, 3) corrective service, and 4) communication services

Learning Outcome 1 of 3
Graduates will have acquired the knowledge and skills necessary in preparation to sit for the COMPTIA A+ and Net+ external certification examinations.

Benchmark
80% of the students will be prepared to pass the COMPTIA A+ and Net+ exams by completing courses ECT 2150 and ECT 2160 with a combined average of at least a "B" grade.

Assessment Method 1
In oral, written and practical mediums, students will be able to describe the proper functioning characteristics of a PC Desktop system in classes ECT 2150 and ECT 2160 with a combined average of at least a "B" grade.

Assessment Method 2
In oral, written and practical mediums, students will be able to describe the common malfunctioning characteristics of a PC Desktop system in classes ECT 2150 and ECT 2160 with a combined average of at least a "B" grade.

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

Program Assessment Plan
Computer Hardware Engineering Technology

Learning Outcome 2 of 3
Students will learn steps to troubleshoot and correct computer hardware and operating system problems.

Benchmark
80% of the required 10 labs and lab reports in ECT 2150 will be completed with a grade of 80% or higher.

Assessment Method
Completed labs and related reported should be written in clear English language with acceptable paragraph structure, grammar, and content with a combined with at least a grade of "B" determined by the instructor.

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

Learning Outcome 3 of 3
Graduates will have acquired the knowledge and skills necessary to sit for the Electronics Associate Level Exam administered by the International Society for the Certification of Electronics Technicians (ISCET).

Benchmark
Of the students from OCC who opt to sit for the Associate Level ISCET exam, 80% will pass and achieve the external certification

Assessment Method
Report from the Examination Director of ISCET:

> Mr. Edward Clingman
> 3608 Pershing Avenue
> Fort Worth, Texas 76107
> 1-800-946-0201

Assessment Date   6/1/2008   **Findings Sent to OAE Date 1**

Learning Outcome
Students will develop oral and written technical communications skills.
Benchmark 1
Students will achieve 80% in evaluation by faculty against technical writing standards.
Assessment Method 1
All graduates must pass ENG 1450, Writing & Reading for Problem Solving.

Assessment Date 1   5/1/2005   **Findings Sent to OAE Date 1**   6/1/2005

Tuesday, February 28, 2006   Page 1 of 2

Learning Outcomes
Graduates will have acquired the knowledge and non-technical problem-solving and communication skills necessary to enable them to transfer to other institutions.
Benchmark 1
Transfer institutions rate the program courses as transferable to their institution greater than 80%.
Assessment Method 1
Survey transfer institutions to assess the appropriateness of instructional content to provide optimum portability of credits and knowledge, and identify new transfer opportunities.

Assessment Date 1   5/1/2005   **Findings Sent to OAE Date 1**   6/1/2005

Learning Outcomes
Students will learn steps to create networks and assemble a server.
Benchmark 1
85% of 13 labs and lab reports in ECT 2160 will be completed with a grade of 90% or higher.
Assessment Method 1
Completed labs and lab reports submitted.

Assessment Date 1   4/1/2005   **Findings Sent to OAE Date 1**   5/1/2005

**OAKLAND
COMMUNITY
COLLEGE**

TO: Curriculum Review Committee
FROM: Dr. Robert A. Powell
SUBJECT: Interdisciplinary Interactions for EEC Core Courses and the CHT Program
DATE: March 17, 2006

To date, four (4) disciplines require EEC courses for their programs. (please see attached)

1) **Robotics/Automated Systems Technology** - Teaching faculty Doug St. Clair has responded to the "FACULTY SURVEY OF INTERDISCIPLINARY INTERACTIONS" . Please see OCC Catalog 2001/2002 page 261 in which ROB 2040 may require EEC 1040 as a prerequisite. Mr. St. Clair indicated that for the supporting class of EEC 1040, it is working well where they use the concepts in their AC/DC controller maintenance course.

2) **Electrical Trades Technology** - Teaching faculty indicated that the interdisciplinary courses are working well with no revisions required at this time

   The interdisciplinary courses are EEC 1020, 1040, 1050, 1350, and 1270

3) **Computer Hardware Technology** - Teaching faculty indicated that the interdisciplinary courses are working well with no revisions required at this time

   The interdisciplinary courses are EEC 1020, 1040, 1050, 1350, and 1270

4) **Multi-Skilled Manufacturing Technology** - Teaching faculty indicated that the interdisciplinary courses are working well with no revisions required at this time

   The interdisciplinary course is EEC 1040

1