

Major Highlights

**Program Dashboard
Report 2003-04**

**Degree and Credit
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**Occupational
Projections (2004 –
2014)**

**Program Assessment
Plan (most current)**

**Summary of Program
Assessment Results**

Follow up

Recommendations

**Welding Technology
Major Highlights
March 2006**

Overview

The information contained within this binder represents supporting reports and data associated with the CRC's review of the Welding 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 10 Certificates have been awarded in the Welding Technology program. Moreover, only 2 Certificates have been awarded in the past five years.
- Credit hour enrollment in Welding courses has fluctuated over the past ten years. Enrollment reached its lowest point during academic year 1994-95 (351 credit hours), while peaking during academic year 2003-04 (597 credit hours).
- During 2003-04 a total of sixteen (16) ATW sections were offered, of which none were canceled. However, average section size totaled 12.5 students, approximately half of the college-wide average of 23.3. Meanwhile, sections were filled to 97.6% of capacity during the academic year, above the college-wide percentage of 88%.
- The percent of minority students (8.4%) enrolled in Welding courses is more than three times below the college-wide average of 27%.
- Slightly more than nine percent of students withdraw from Welding courses. This is below the college-wide course withdraw rate of 16.5%. Furthermore, during academic year 2003-04 no student received an incomplete. Meanwhile, nearly 91% of all students successfully pass Welding courses with a grade of "C" or higher which is well above the college-wide average of 65%.
- Occupations associated with Welding Technology are expected to experience varying degrees of growth and decline over the next ten years. The majority of future job opportunities will result from the replacement of current workers. However, two of the three major occupational groups associated with Welding are expected to shrink over the next ten years.
- In total the Welding Technology program has identified four Learning Outcomes with eight Benchmarks spread across these Outcome. Since January 2005, three of the eight Benchmarks have been assessed.

when from

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 ATW

Dashboard Score 9.01

Title Welding Technology

| | Program | College Wide |
|------------------------------------------------|----------------|---------------------|
| Average Section Size | 12.5 | 23.3 |
| Sections Filled to Capacity | 97.6% | 88.4% |
| Percent of Completed Sections | 100.0% | 89.1% |
| Weighted Percent Change in Headcount | 1.5% | 3.5% |
| Weighted Percent Change in Credit Hours | 1.4% | 3.0% |
| Percent of Minority Students | 8.4% | 27.1% |
| Percent of Withdrawals | 9.1% | 16.5% |
| Percent of Incompletes | 0.0% | 1.6% |
| Student Course Completion Rate | 90.9% | 64.8% |

Average Section Size

Prefix ATW

Prefix Title Welding Technology

Total Students 200

Number of Sections 16

Average Section Size 12.5

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 ATW

Prefix Title Welding Technology

Total Students 200

Total Capacity 205

Sections Filled To Capacity 97.6%

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 ATW

Prefix Title Welding Technology

Active Sections 16

Cancelled Sections 0

Total Sections 16

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 ATW

Prefix Title Welding Technology

2000-01 Headcount 142

2001-02 Headcount 147

2002-03 Headcount 179

2003-04 Headcount 200

Three Year Average Change 19

Weighted Percent Change in Headcount 1.5%

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 ATW

Prefix Title Welding Technology

2000-01 Credit Hours 426

2001-02 Credit Hours 441

2002-03 Credit Hours 537

2003-04 Credit Hours 600

Three Year Average Change 58

Weighted Percent Change in Credit Hours 1.4%

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:

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 = $(\text{year 2} - \text{year 1}) + (\text{year 3} - \text{year 2}) + (\text{year 4} - \text{year 3}) / 3$)

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 = $\text{Three Year Average Change} / ((\text{year 2} + \text{year 3} + \text{year 4}) / 3)$)

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 ATW

Prefix Title Welding Technology

Minority Students 13

Total Students 155

Percent of Minority Students 8.4%

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 ATW

Prefix Title Welding Technology

Total Withdrawals 18

Total Grades 198

Percent of Withdrawals 9.1%

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 | ATW |
| Prefix Title | Welding Technology |
| Total Incompletes | 0 |
| Total Grades | 198 |
| 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 ATW

Prefix Title Welding Technology

Successful Grades 180

Total Student Grades 198

Student Course Completion Rate 90.9%

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).

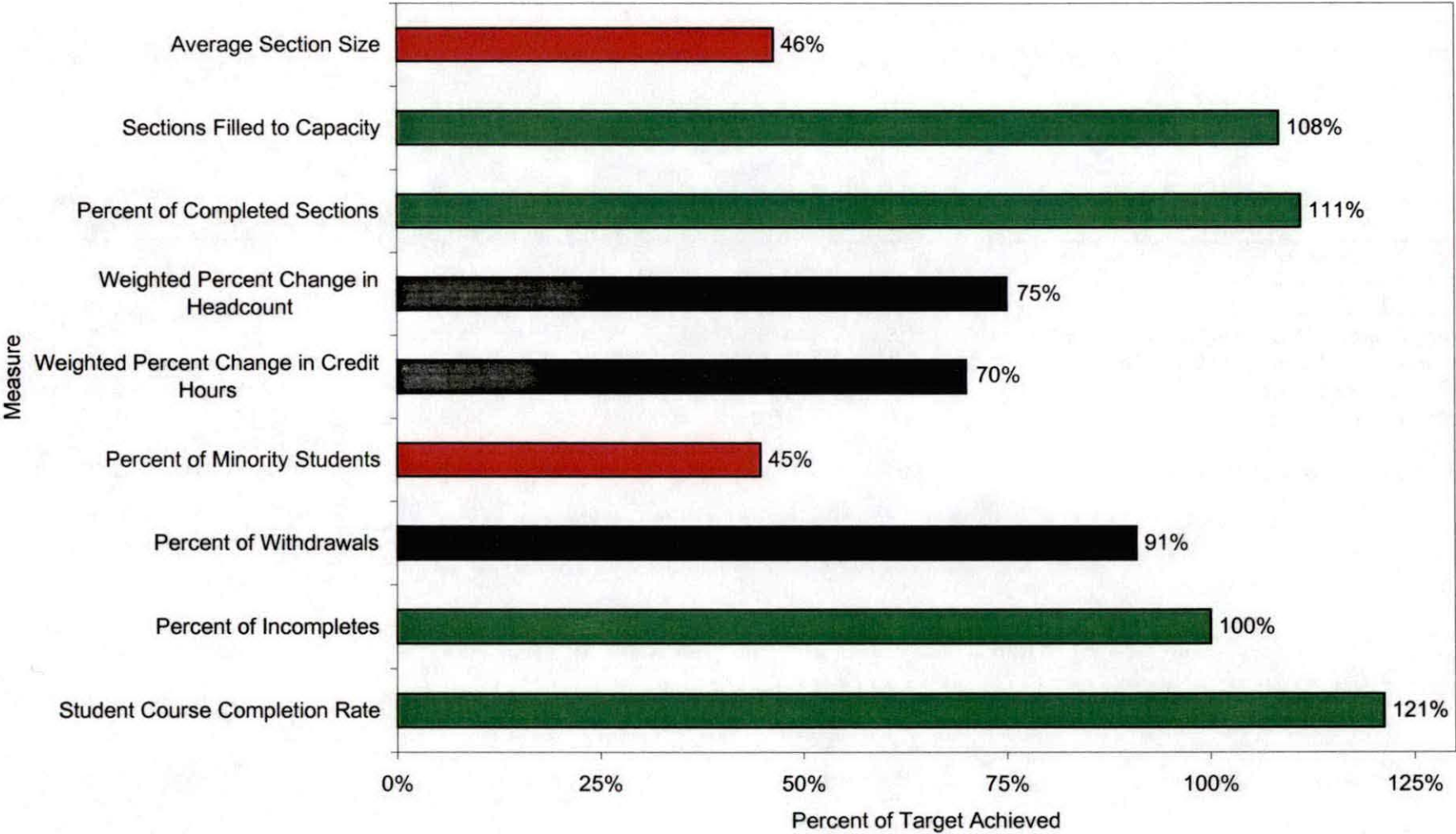
Oakland Community College Program Dashboard Report 2003-04

Welding Technology ATW Dashboard Score: 9.01

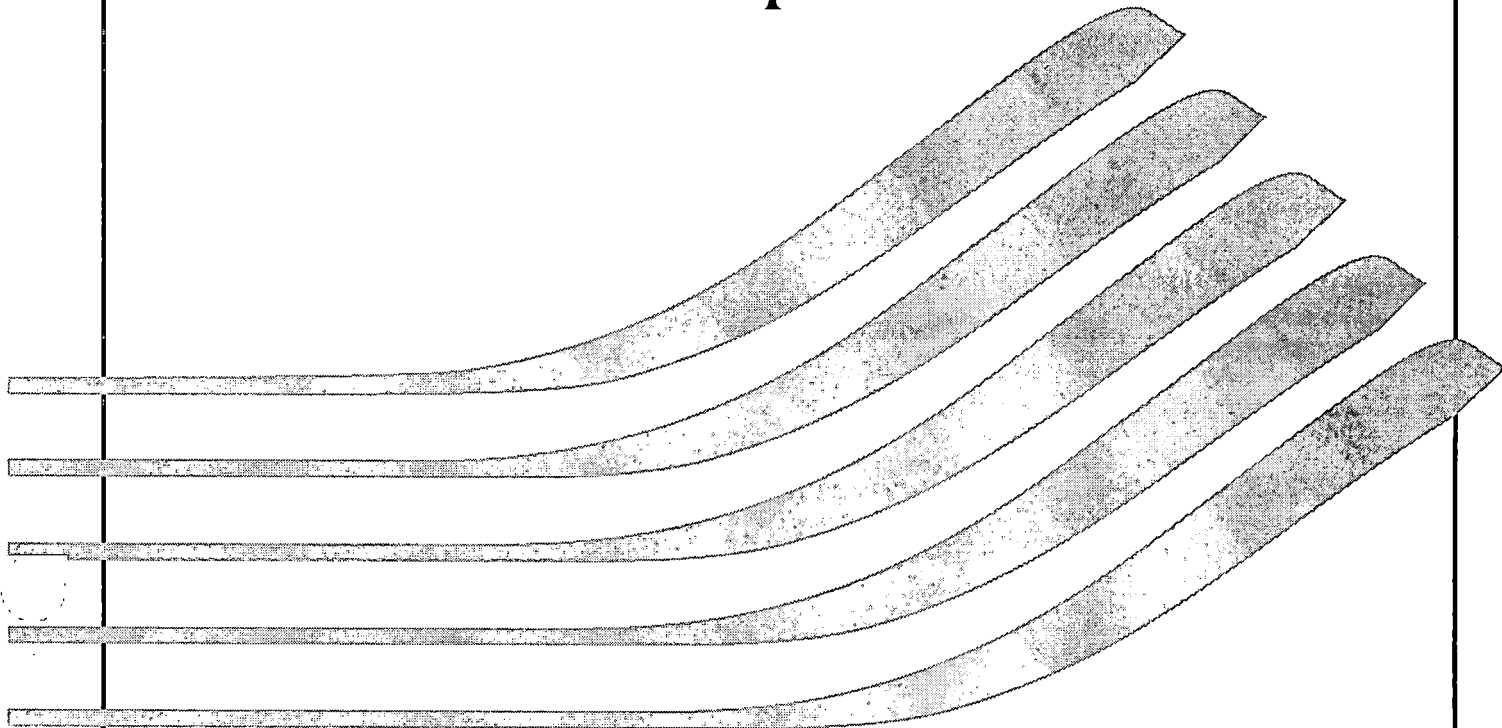
| Measures | Benchmarks | | | Percent of Target Achieved | Weight | Weighted Score |
|-----------------------------------------|------------------|------------------|--------|-------------------------------|--------|-------------------|
| | Current Score | Trouble Score | Target | | | |
| Average Section Size | 12.5 | 22.5 | 27.0 | 46.3% | 8.3% | 0.38 |
| Sections Filled to Capacity | 97.6% | 75.0% | 90.0% | 108.4% | 7.9% | 0.86 |
| Percent of Completed Sections | 100.0% | 75.0% | 90.0% | 111.1% | 8.8% | 0.98 |
| Weighted Percent Change in Headcount | 1.5% | 0.5% | 2.0% | 75.0% | 12.7% | 0.95 |
| Weighted Percent Change in Credit Hours | 1.4% | 0.5% | 2.0% | 70.0% | 10.8% | 0.76 |
| Percent of Minority Students | 8.4% | 16.9% | 18.8% | 44.7% | 6.9% | 0.31 |
| Percent of Withdrawals | 9.1% | 15.0% | 0.0% | 90.9% | 16.2% | 1.47 |
| Percent of Incompletes | 0.0% | 3.0% | 0.0% | 100.0% | 6.8% | 0.68 |
| Student Course Completion Rate | 90.9% | 60.0% | 75.0% | 121.2% | 21.6% | 2.62 |

**Oakland Community College
Percent of Target Achieved
2003-04**

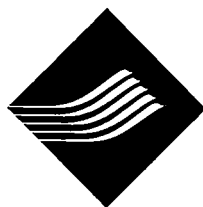
Welding Technology ATW



Institutional Research Report



**Welding Technology
Degree and Credit Hour Trends Reports
for
Curriculum Review Committee**



**OAKLAND
COMMUNITY
COLLEGE**

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ATW Three-Year Moving Mean

ATW Rate of Change

College-Wide Ten-Year Trend

Robotics/Automated Systems Technology Credit Hour Trends Report

ROB Credit Hour Trends Summary

ROB Ten-Year Trend

ROB Three-Year Moving Mean

ROB Rate of Change

College-Wide Ten-Year Trend



OAKLAND
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Degree Trends Report
Welding Technology
WEL
2004-05

Prepared by:
Oakland Community College
Office of Institutional Research
March 14, 2006

**Oakland Community College
Degree Trends Report
Welding Technology (WEL)
1995-96 through 2004-05**

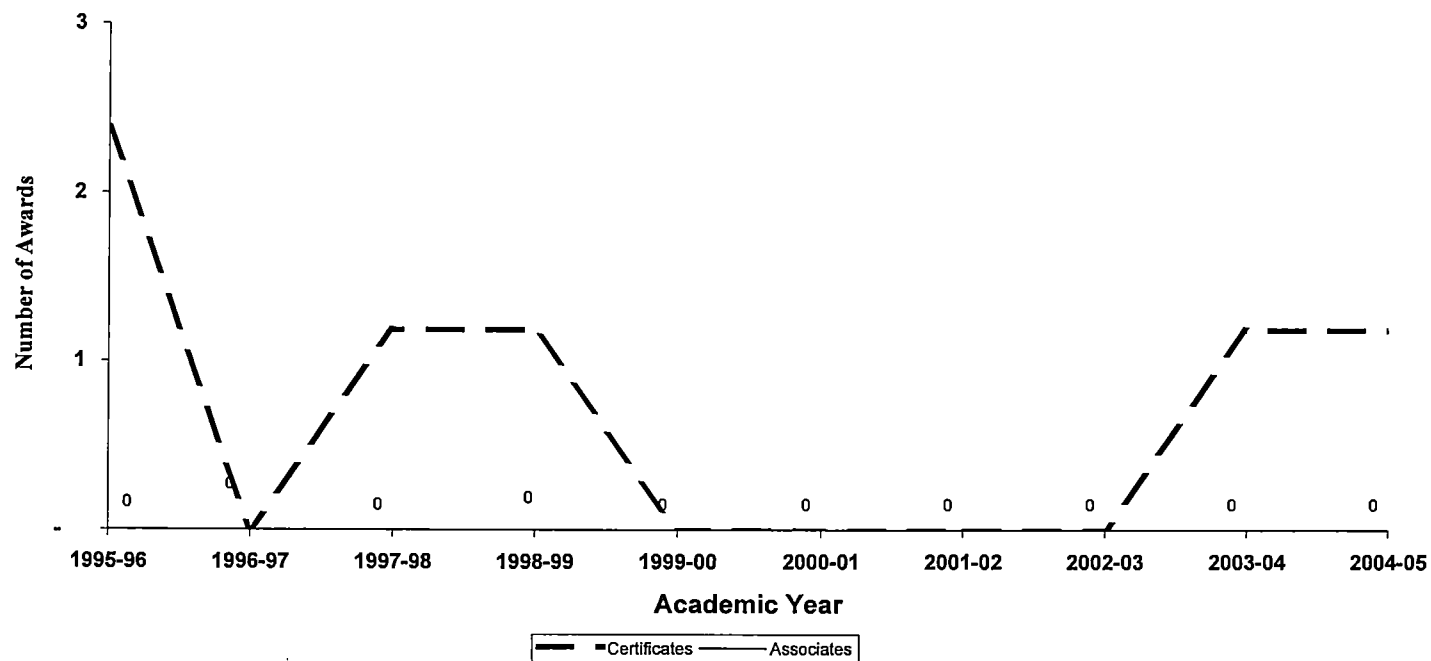
The Degree Trends Report is developed by the Office of Institutional Research based on data compiled from official college records which are submitted to the State of Michigan for the IPEDS (Integrated Post-Secondary Education System) Annual Degrees Conferred Report. The Degree Trends Report examines 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 Welding Technology (WEL)

- Ten-year trend showing the annual awards conferred in Welding Technology
- Rate of change in annual awards conferred in Welding Technology
- The three-year Moving Mean for annual awards conferred in Welding Technology
- Ten-year trend in awards conferred collegewide.

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

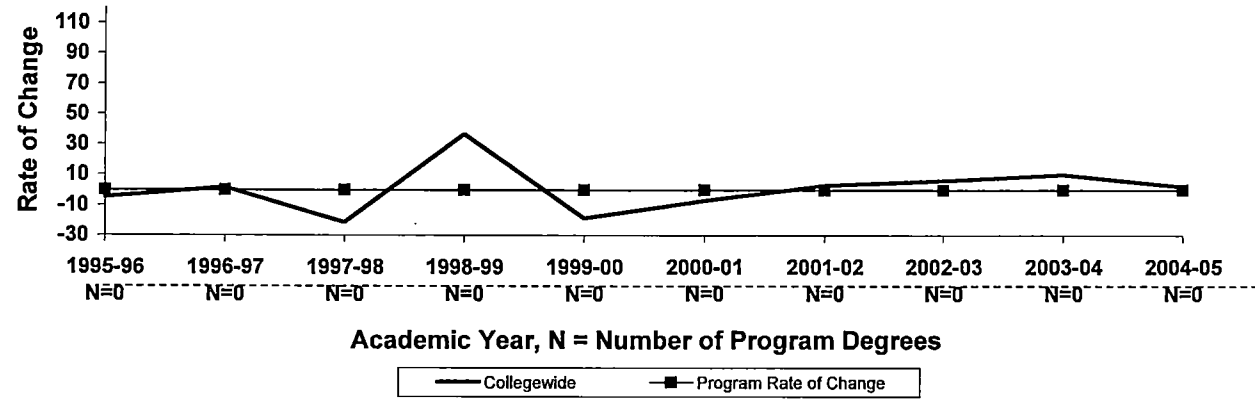
**Oakland Community College
Associate Degrees and Certificates Awarded
Welding Technology
1995-96 through 2004-05**



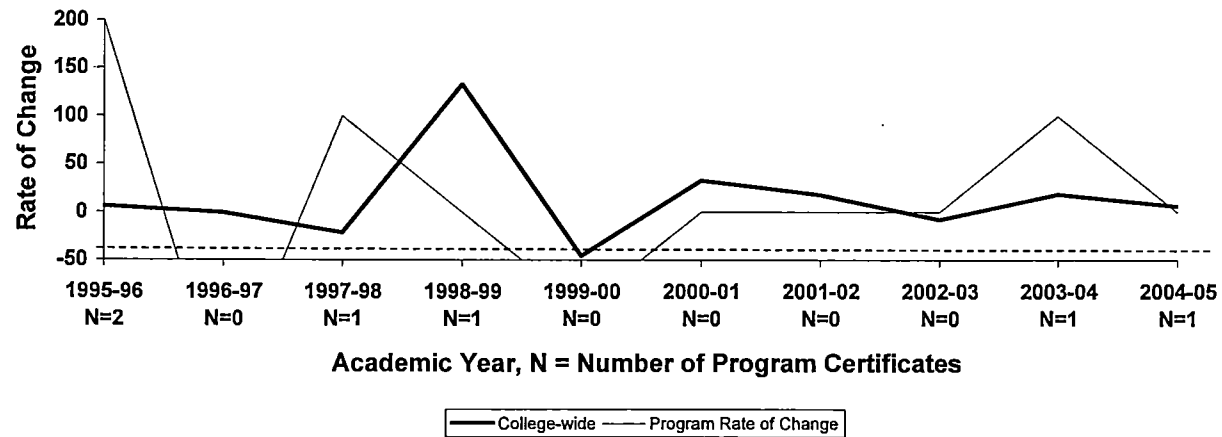
| <u>Academic Yr.</u> | <u>Certificates</u> | <u>Associates</u> |
|---------------------|---------------------|-------------------|
| 1995-96 | 2 | 0 |
| 1996-97 | 0 | 0 |
| 1997-98 | 1 | 0 |
| 1998-99 | 1 | 0 |
| 1999-00 | 0 | 0 |
| 2000-01 | 0 | 0 |
| 2001-02 | 0 | 0 |
| 2002-03 | 0 | 0 |
| 2003-04 | 1 | 0 |
| 2004-05 | 1 | 0 |

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

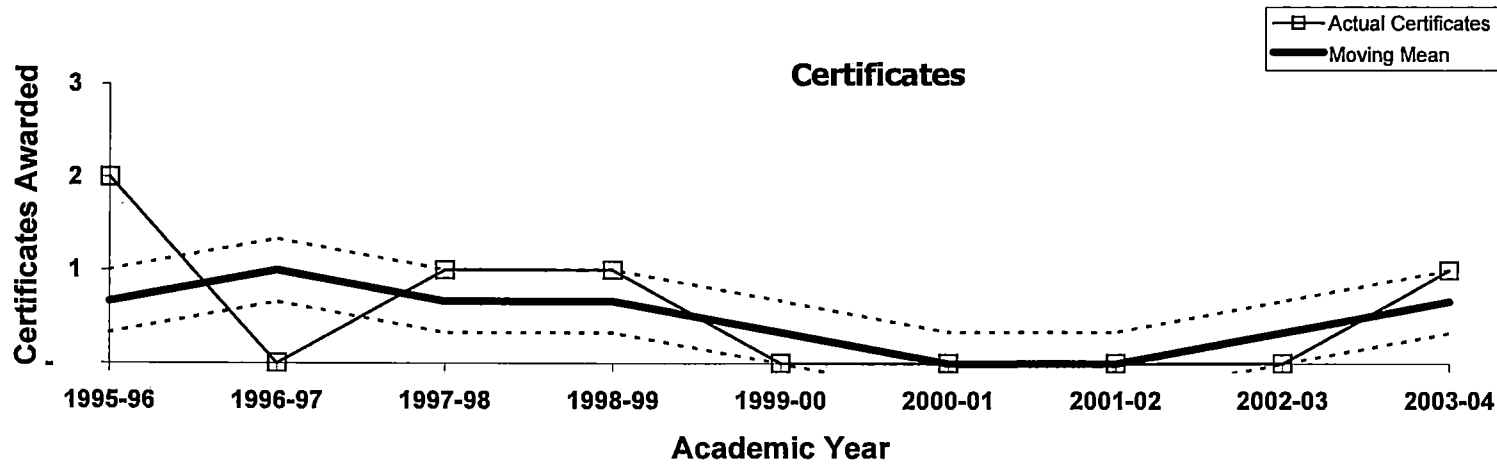
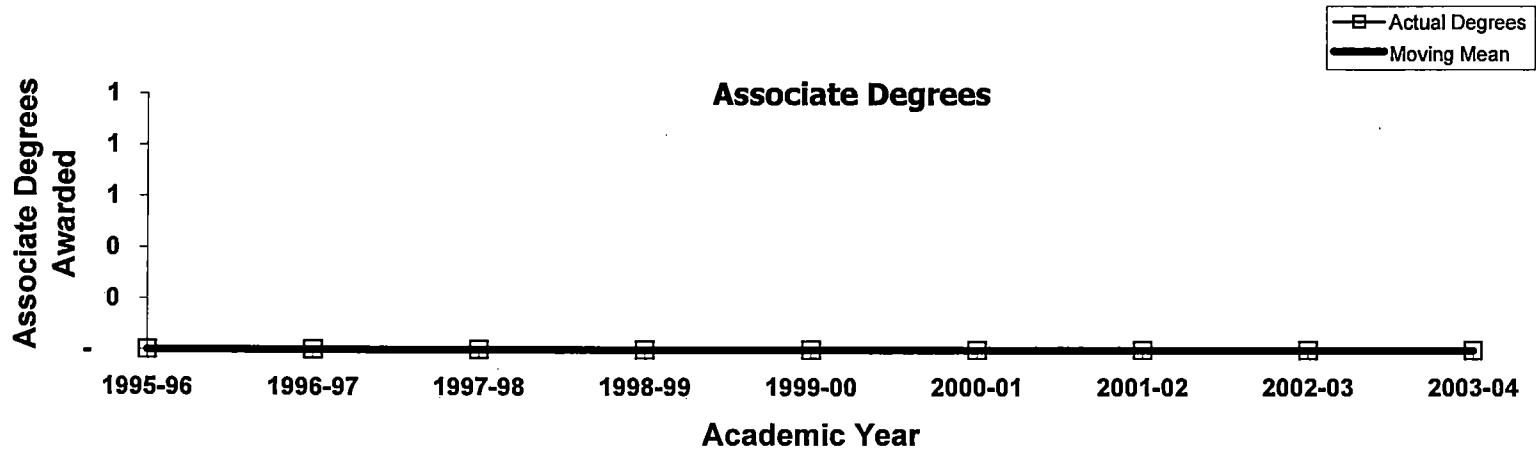
Associate Degrees



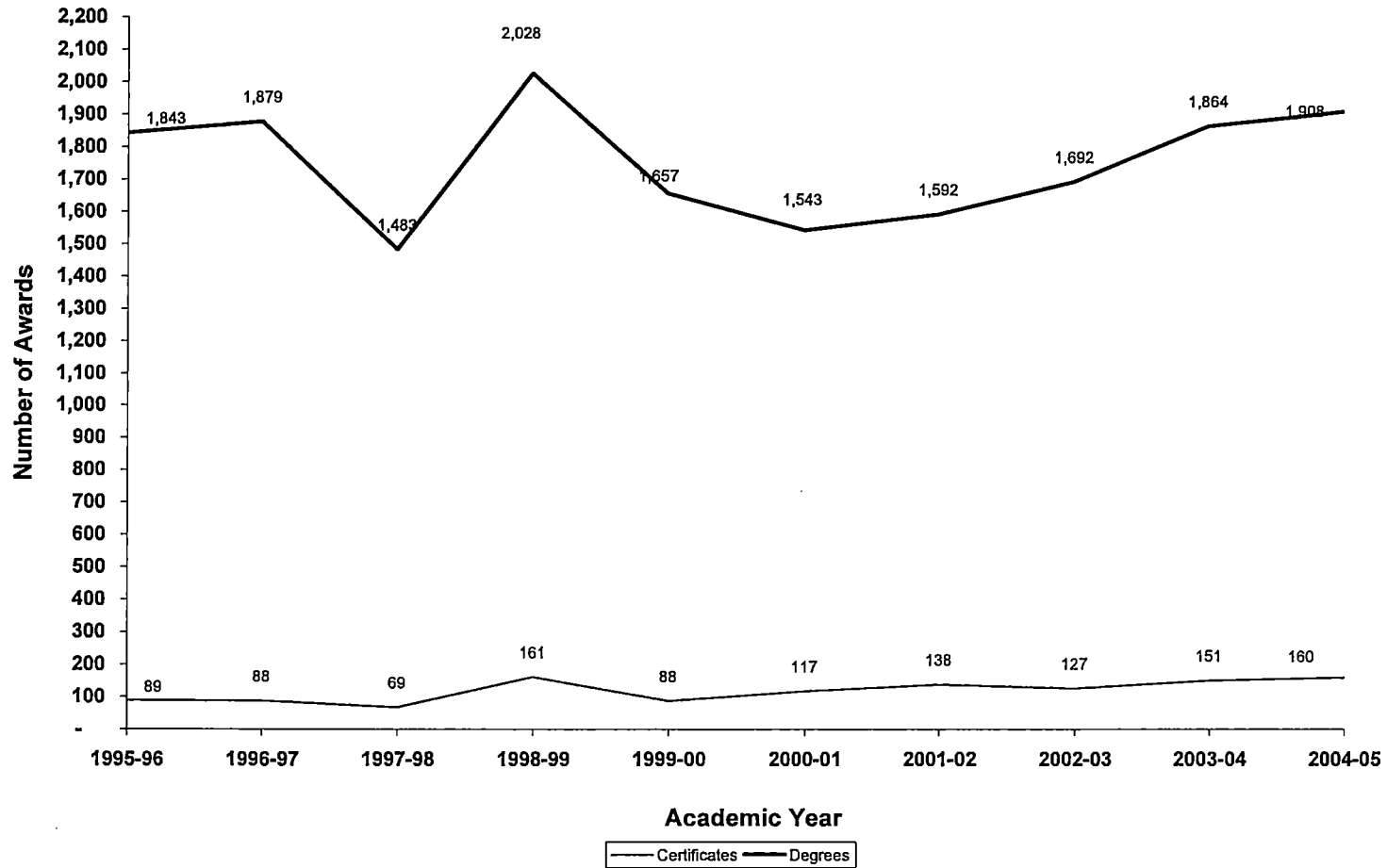
Certificates



**Oakland Community College
 Three Year Moving Mean in Annual Awards
 Welding Technology
 1995-96 through 2003-04**



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





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**Credit Hour Trends Report
Welding/Fabrication Tech
ATW
2004-05**

**Prepared by:
Oakland Community College
Office of Institutional Research
March 14, 2006**

**Oakland Community College
Credit Hour Trends Report
Welding/Fabrication 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.

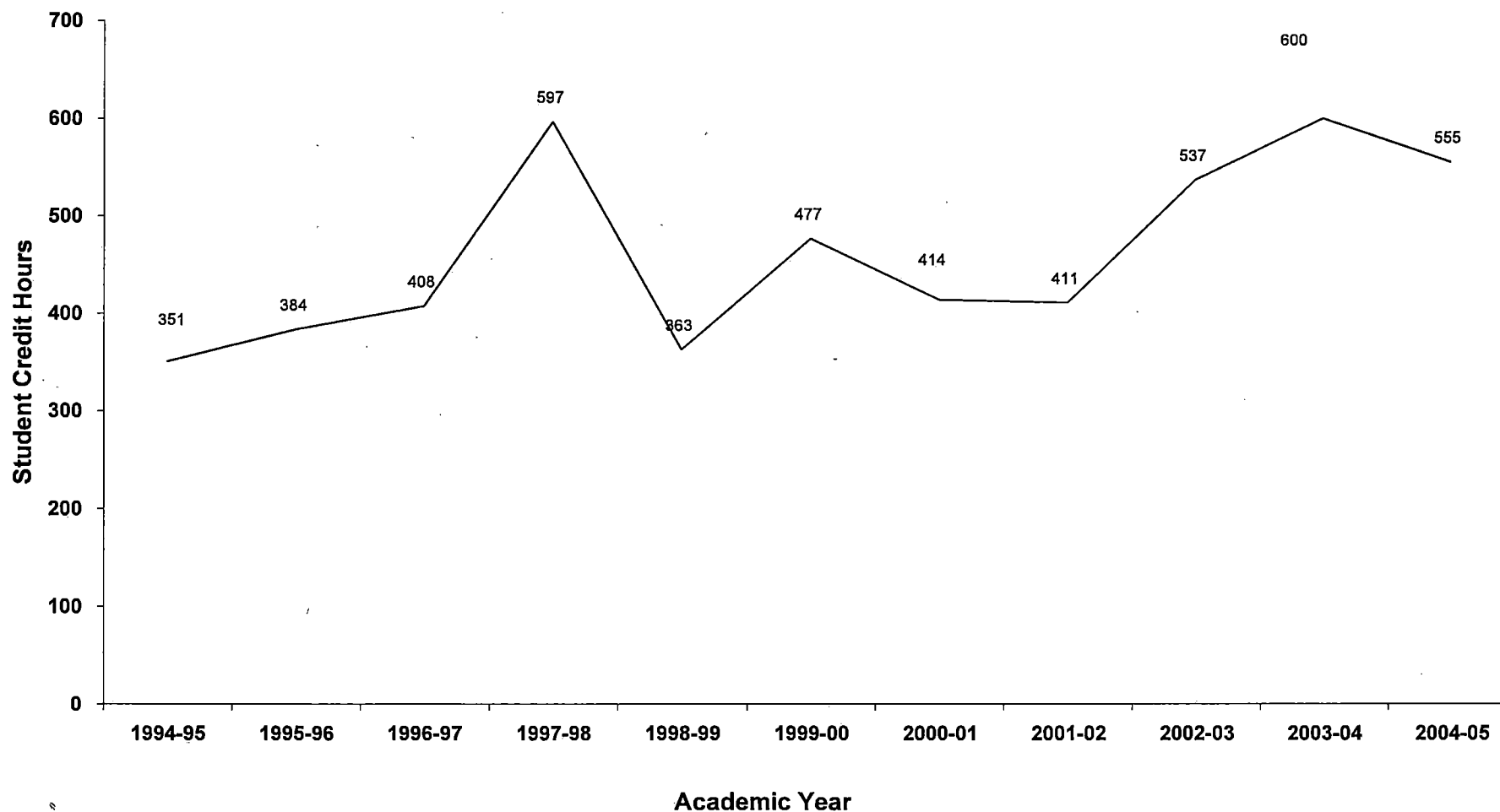
Trends over a specified period of time are illustrated by the following graphs for Welding/Fabrication Tech.

- Graph depicting ten-year trend in student credit hours generated by Welding/Fabrication Tech
- Graphs depicting three-year moving mean and rate of change in student credit hours for Welding/Fabrication Tech.
- Ten-year trend in annual credit hours generated Collegewide.

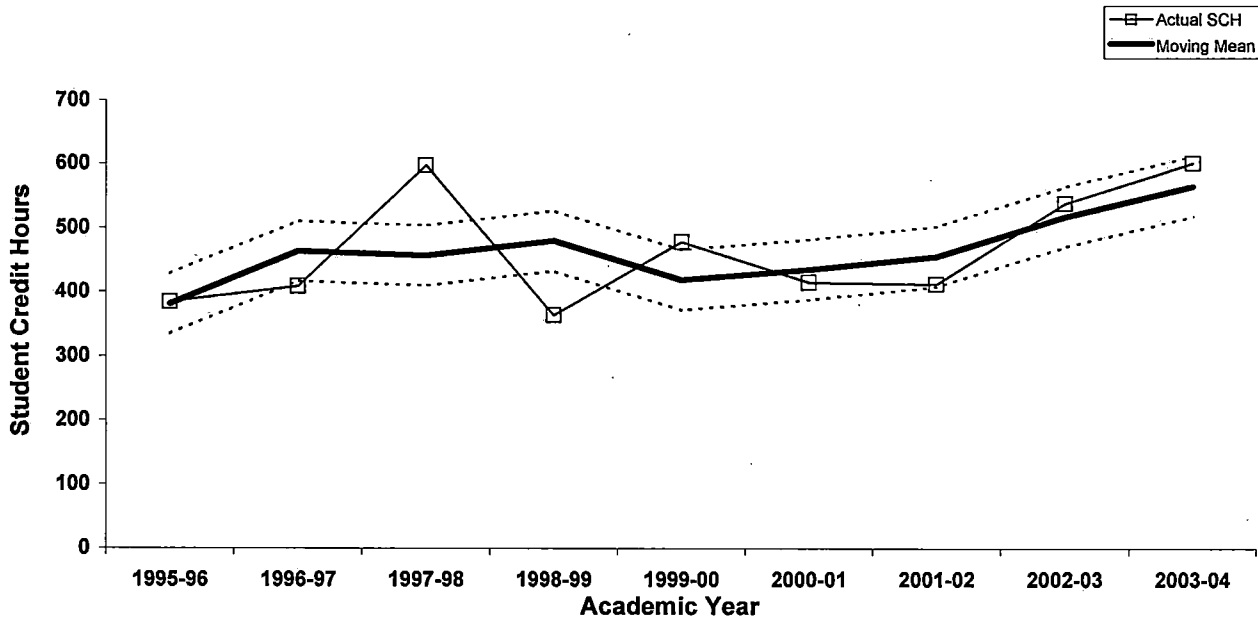
Questions regarding this report can be forwarded to the Office of Institutional Research at (248) 341-2123.

**Oakland Community College
Ten-Year Trend in Student Credit Hours
Welding/Fabrication Tech
1994-95 through 2004-05**

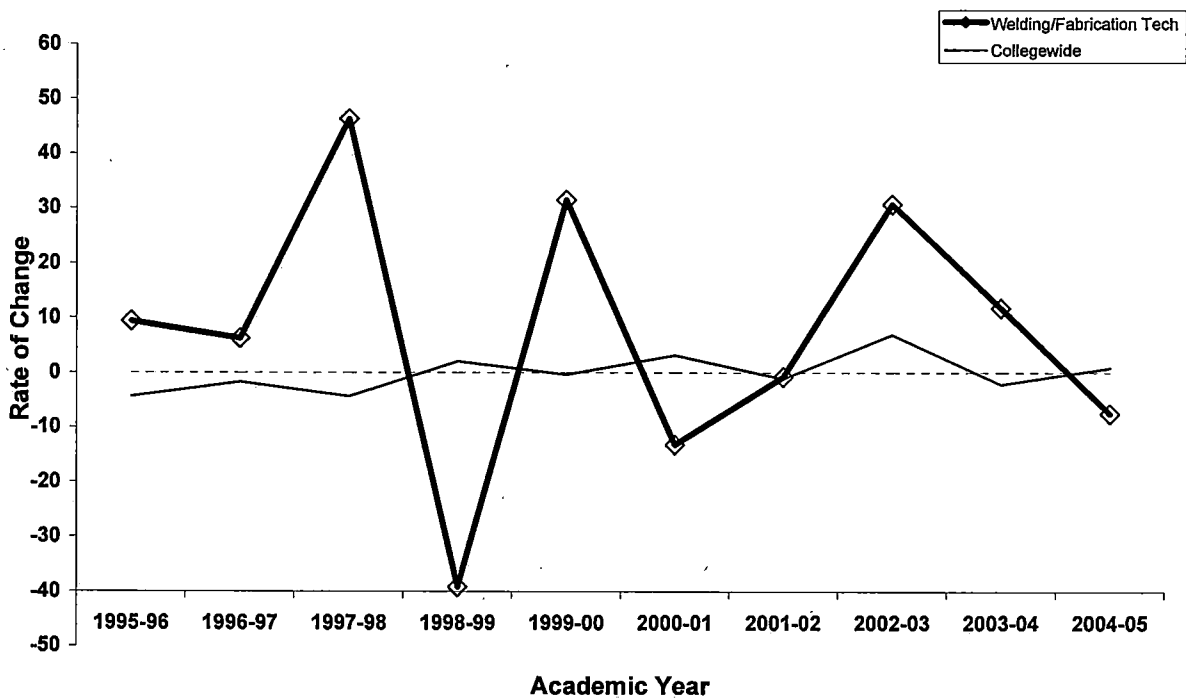
| | 1994-95 SCH | 1995-96 SCH | 1996-97 SCH | 1997-98 SCH | 1998-99 SCH | 1999-00 SCH | 2000-01 SCH | 2001-02 SCH | 2002-03 SCH | 2003-04 SCH | 2004-05 SCH | 5-Year % Change | 10-Year % Change |
|--------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------|---------------------|
| Welding/Fabrication Tech | 351 | 384 | 408 | 597 | 363 | 477 | 414 | 411 | 537 | 600 | 555 | 16.4 | 58.1 |
| 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 |



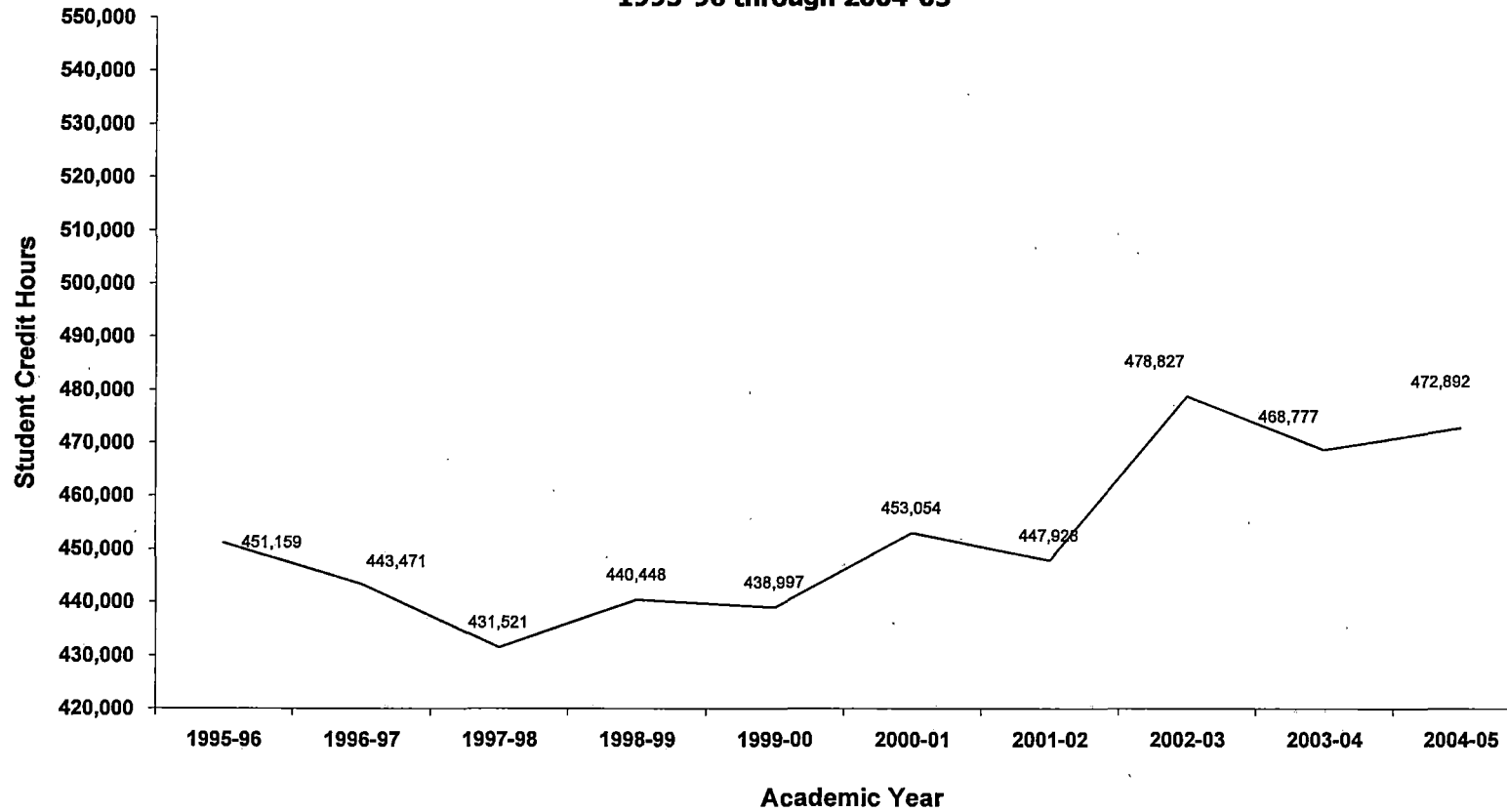
**Oakland Community College
Three-Year Moving Mean
Welding/Fabrication Tech
1995-96 through 2003-04**



Rate of Change in Student Credit Hours 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
Robotics Tech
ROB
2004-05**

**Prepared by:
Oakland Community College
Office of Institutional Research
March 14, 2006**

**Oakland Community College
Credit Hour Trends Report
Robotics 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.

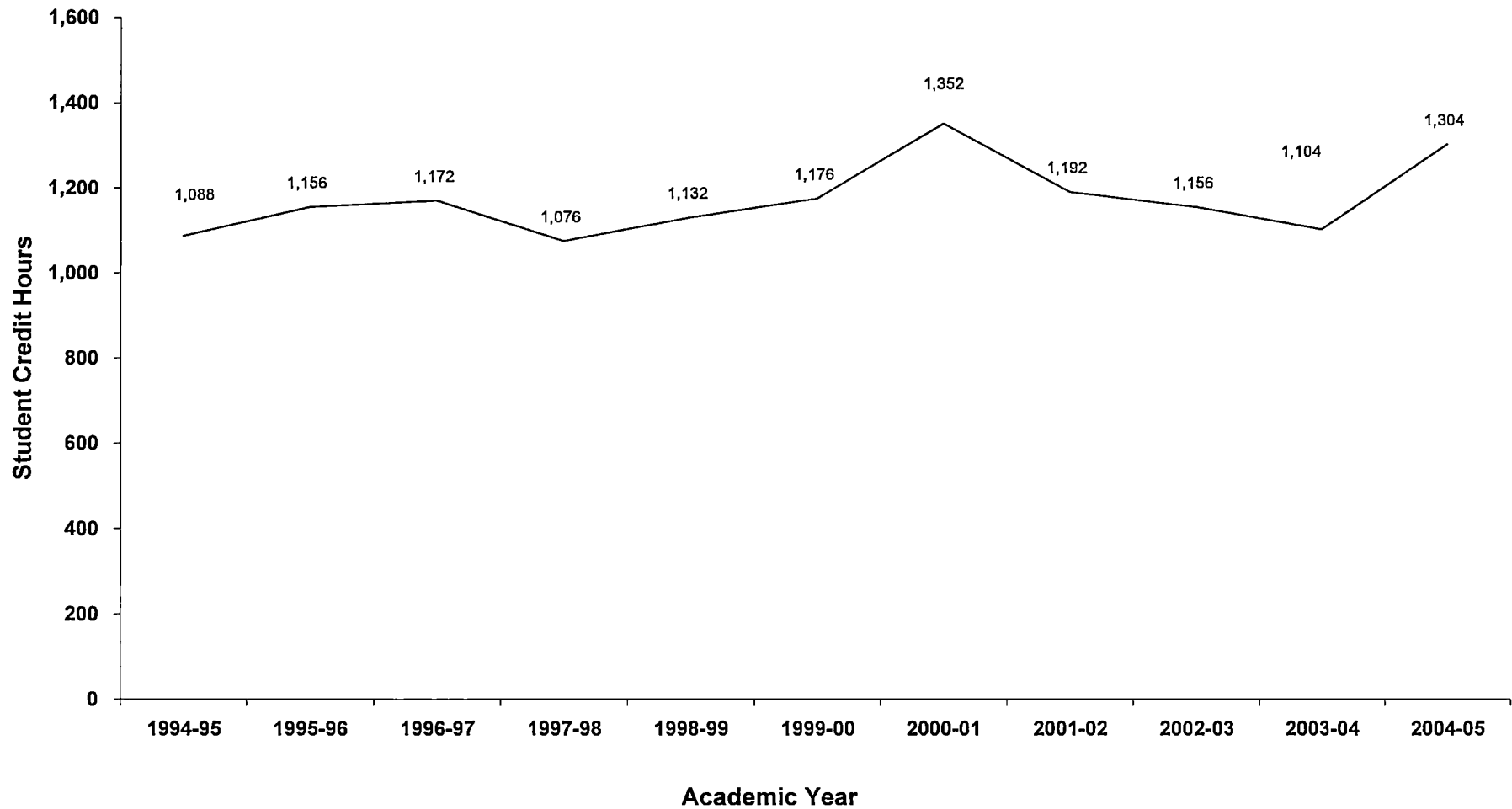
Trends over a specified period of time are illustrated by the following graphs for Robotics Tech.

- Graph depicting ten-year trend in student credit hours generated by Robotics Tech
- Graphs depicting three-year moving mean and rate of change in student credit hours for Robotics Tech.
- Ten-year trend in annual credit hours generated Collegewide.

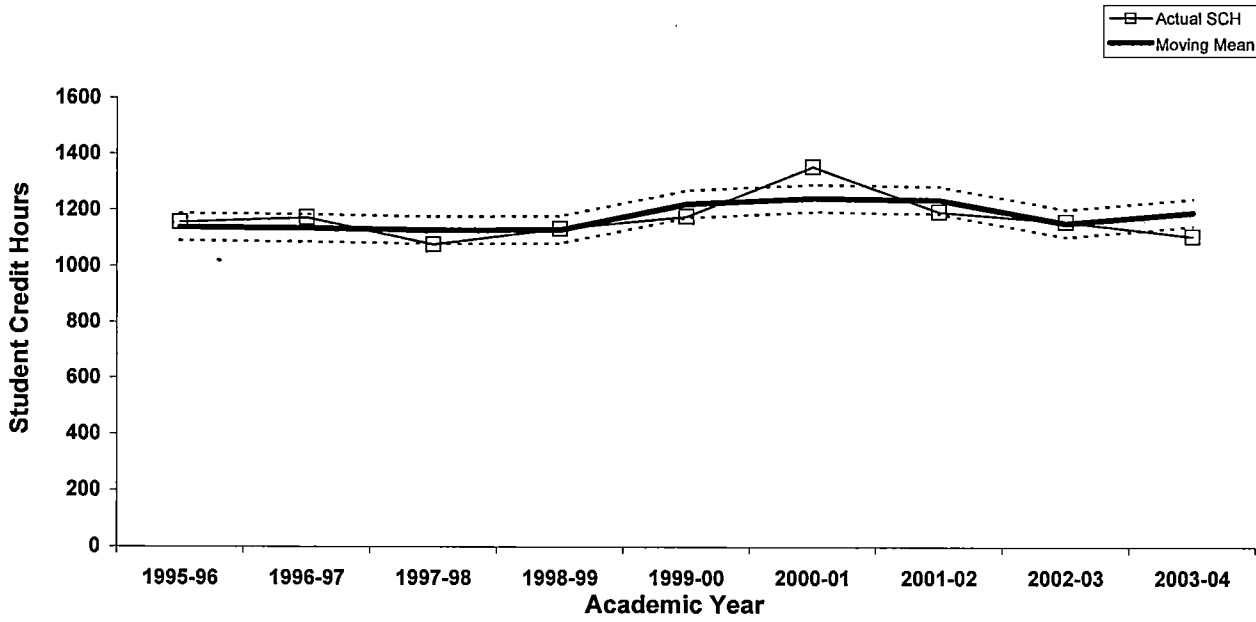
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**Oakland Community College
Ten-Year Trend in Student Credit Hours
Robotics Tech
1994-95 through 2004-05**

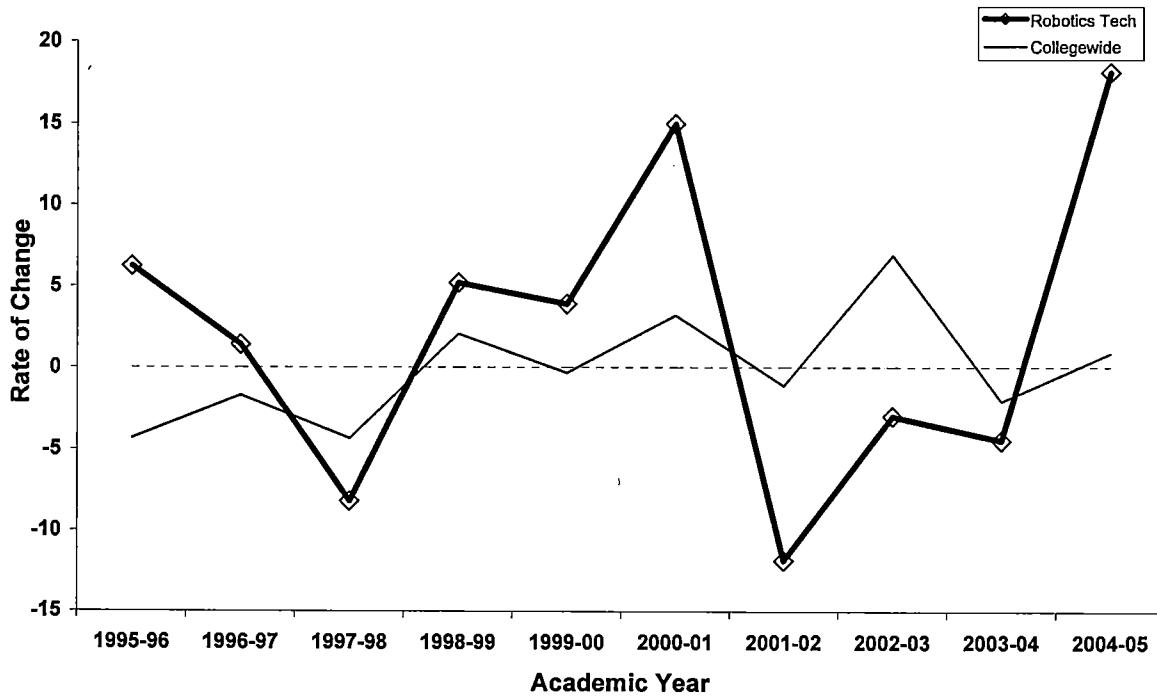
| | 1994-95 SCH | 1995-96 SCH | 1996-97 SCH | 1997-98 SCH | 1998-99 SCH | 1999-00 SCH | 2000-01 SCH | 2001-02 SCH | 2002-03 SCH | 2003-04 SCH | 2004-05 SCH | 5-Year % Change | 10-Year % Change |
|---------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------------|---------------------|
| Robotics Tech | 1,088 | 1,156 | 1,172 | 1,076 | 1,132 | 1,176 | 1,352 | 1,192 | 1,156 | 1,104 | 1,304 | 10.9 | 19.9 |
| 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 |



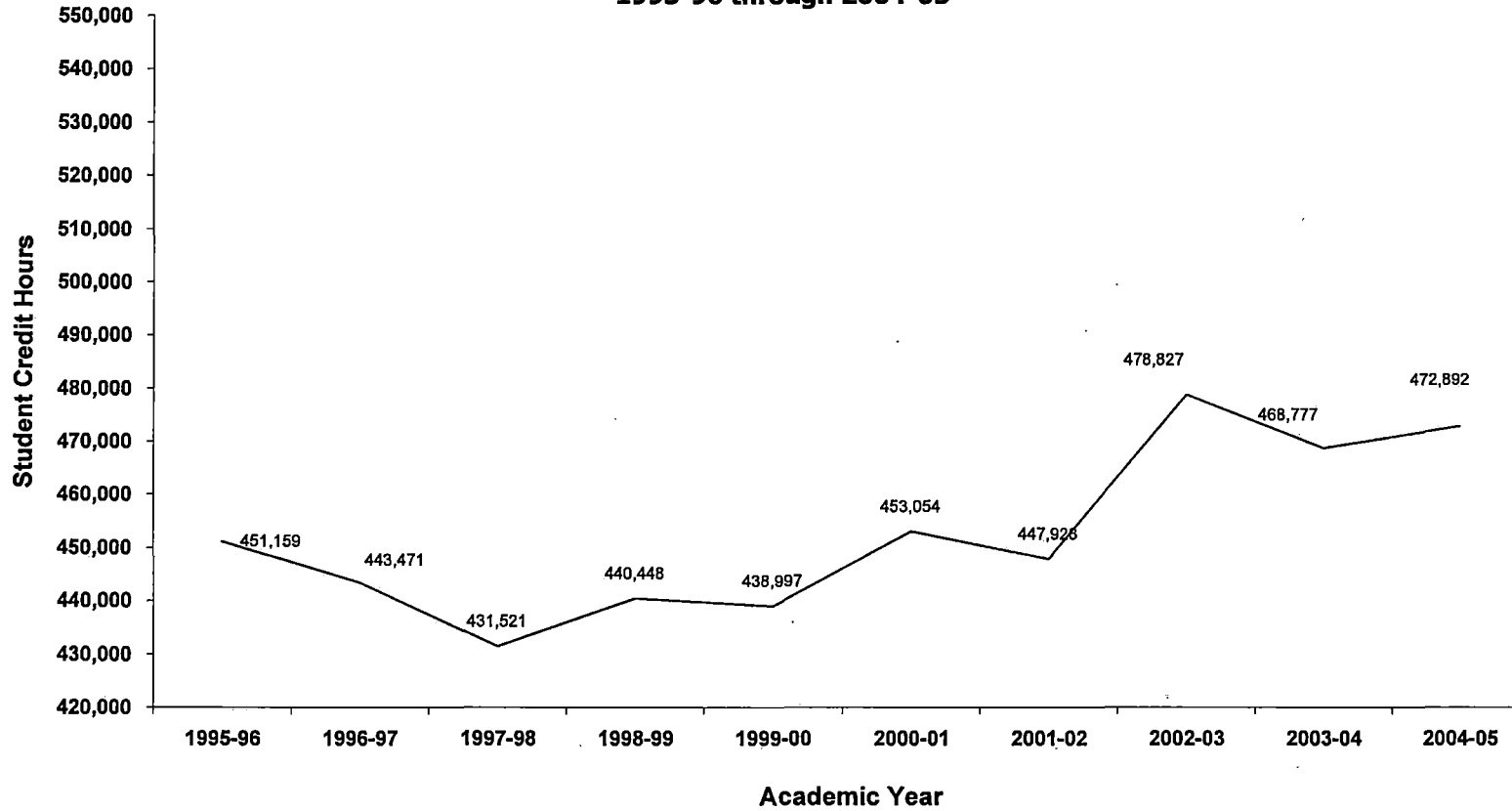
**Oakland Community College
Three-Year Moving Mean
Robotics Tech
1995-96 through 2003-04**



Rate of Change in Student Credit Hours 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 |

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.

Welding Technology Related Occupations (2004 - 2014)

SOC Detail Group

| SOC Code | Name | Base Year | Five Year | Ten Year | New Jobs | Rplmnt Jobs | % New Jobs | % Rplmnt | % New & Rplmnt | Earnings |
|----------------|----------------------------------------------------------------------------|-----------|-----------|----------|----------|-------------|------------|----------|----------------|-----------|
| 51-4121 | Welders, cutters, solderers, and brazers | 9,535 | 10,288 | 10,776 | 1,241 | 2,604 | 13.0% | 27.3% | 40.3% | \$111,391 |
| 51-4122 | Welding, soldering, and brazing machine setters, operators, and tenders | 3,173 | 2,892 | 2,761 | -412 | 1,007 | -13.0% | 31.7% | 18.8% | \$96,147 |
| 51-4191 | Heat treating equipment setters, operators, and tenders, metal and plastic | 915 | 787 | 734 | -181 | 324 | -19.8% | 35.4% | 15.6% | \$69,889 |
| Totals: | | 13,623 | 13,967 | 14,271 | 648 | 3,935 | | | | |

**U.S. Department of Labor
Welding Technology Related Occupations
SOC Code Descriptions**

51-4121 Welders, Cutters, Solderers, and Brazers

Use hand-welding, flame-cutting, hand soldering, or brazing equipment to weld or join metal components or to fill holes, indentations, or seams of fabricated metal products.

51-4122 Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders

Set up, operate, or tend welding, soldering, or brazing machines or robots that weld, braze, solder, or heat treat metal products, components, or assemblies. Include workers who operate laser cutters or laser-beam machines.

51-4191 Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic

Set up, operate, or tend heating equipment, such as heat-treating furnaces, flame-hardening machines, induction machines, soaking pits, or vacuum equipment to temper, harden, anneal, or heat-treat metal or plastic objects.

Program Assessment Plan

Welding Technology Certificate

Catalog Description

This program, leading to a Certificate in Welding, prepares the student to enter the occupational area of welding. The program will provide the student with the knowledge and skills needed to gain job entry into a wide variety of welding occupations. Some courses in this program prepare the student for State Certification testing.

Statement of Purpose

The purpose of this program is to prepare students for careers in industry, to update student's education for an existing career, and/or to prepare students to transfer these credits to other educational institutions, and/or for individual enrichment. Students are provided with both a theoretical and practical knowledge base. The specific goal of the program is to graduate competent welding technicians.

Learning Outcomes

Acquisition of skills and abilities that meet or exceed needs for career or personal development growth.

Benchmark 1

80% of student respondents rate program beneficial to their career or personal development goals one to three years after program completion.

Assessment Method 1

Survey students returning to acquire additional skills one to three years later for perceptions of how certificate prepared them for the future.

Assessment Date 1 5/1/2005

Findings Sent to OAE Date 1 6/1/2005

Benchmark 2

80% of employer respondents rate the certificate content and student's resultant skill level as appropriate for their industry.

Assessment Method 2

PROE surveys and general comments from Advisory Committee employer-members regarding the skills obtained and appropriateness of the certificate content from an industry standpoint.

Assessment Date 2 5/1/2005

Findings Sent to OAE Date 2 6/1/2005

Learning Outcomes

Students will master problem analysis and solving skills in order to complete assigned projects given a variety of new situations and environments in the project setting.

Benchmark 1

Terminal Project components will be successfully completed at a level not less than 90%.

Assessment Method 1

Measures from each project focus on the students' ability to adapt knowledge/skills to new situations (i.e. various settings and/or design components, selecting appropriate codes/regulations, selecting appropriate equipment).

Assessment Date 1 5/1/2005

Findings Sent to OAE Date 1 6/1/2005

Learning Outcomes

Students will develop an understanding and appreciation for aesthetic qualities in their work.

Benchmark 1

All students will complete a paper detailing the importance of aesthetics to buyers/users of manufactured parts.

Assessment Method 1

Students will achieve 80% in evaluation by faculty.

Assessment Date 1 5/1/2005

Findings Sent to OAE Date 1 6/1/2005

Benchmark 2

Students will present two welds to classmates rated above 90% for aesthetic quality.

Assessment Method 2

Evaluation by classmates on: quality of weld, appropriateness of materials used, appropriateness of welding method used.

Assessment Date 2 5/1/2005

Findings Sent to OAE Date 2 6/1/2005

Learning Outcomes

Integrate theory, practical skills, knowledge of codes and regulations into basic industry welding applications.

Benchmark 1

The components within the three Terminal Projects (3) will be successfully completed by 100% of students at a level not less than 90% for each project.

Assessment Method 1

Read, print and interpret welding symbols and positions to create welding fixture in ATW 8210, Metal Inert Gas, Final Project.

Assessment Date 1 5/1/2005

Findings Sent to OAE Date 1 6/1/2005

Benchmark 2

The components within the three Terminal Projects (3) will be successfully completed by 100% of the students at a level not less than 90% for each project.

Assessment Method 2

Read, print and interpret welding symbols and positions to create welding fixture in various alloys in ATW 8320, Tungsten Inert Gas, Final Project.

Assessment Date 2 5/1/2005

Findings Sent to OAE Date 2 6/1/2005

Benchmark 3

The components within the three Terminal Projects (3) will be successfully completed by 100% of the students at a level not less than 90% for each project.

Assessment Method 3

Read print and interpret welding symbols and positions to create appropriate pipe design in ATW 8410, Pipe Welding, Final Project.

Assessment Date 3 5/1/2005

Findings Sent to OAE Date 3 6/1/2005

Summary of Program Assessment Results

Welding Technology Certificate

Catalog Description

This program, leading to a Certificate in Welding, prepares the student to enter the occupational area of welding. The program will provide the student with the knowledge and skills needed to gain job entry into a wide variety of welding occupations. Some courses in this program prepare the student for State Certification testing.

Program Statement of Purpose

The purpose of this program is to prepare students for careers in industry, to update student's education for an existing career, and/or to prepare students to transfer these credits to other educational institutions, and/or for individual enrichment. Students are provided with both a theoretical and practical knowledge base. The specific goal of the program is to graduate competent welding technicians.

Learning Outcome

Students will master problem analysis and solving skills in order to complete assigned projects given a variety of new situations and environments in the project setting.

Benchmark 1

Terminal Project components will be successfully completed at a level not less than 90%.

Assessment Method 1

Measures from each project focus on the students' ability to adapt knowledge/skills to new situations (i.e. various settings and/or design components, selecting appropriate codes/regulations, selecting appropriate equipment).

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 develop an understanding and appreciation for aesthetic qualities in their work.

Benchmark 1

All students will complete a paper detailing the importance of aesthetics to buyers/users of manufactured parts.

Assessment Method 1

Students will achieve 80% in evaluation by faculty.

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 2

Students will present two welds to classmates rated above 90% for aesthetic quality.

Assessment Method 2

Evaluation by classmates on: quality of weld, appropriateness of materials used, appropriateness of welding method used.

Benchmark Scheduled To Be Assessed:

5/1/2004

Assessment Results Sent To Office of Assessment & Effectiveness:

6/1/2004

Findings 2

Assessment not implemented.

Learning Outcome

Integrate theory, practical skills, knowledge of codes and regulations into basic industry welding applications.

Benchmark 1

The components within the three Terminal Projects (3) will be successfully completed by 100% of students at a level not less than 90% for each project.

Assessment Method 1

Read, print and interpret welding symbols and positions to create welding fixture in ATW 8210, Metal Inert Gas, Final Project.

Benchmark Scheduled To Be Assessed: 5/1/2004

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

Findings 1

2003-2004 Of 16 Students, 100% achieved the benchmark level of 90% on MIG project. Analysis in May, results available in June of each academic year beginning June 2005.

Will other steps be taken as a result of these findings? Yes

If Yes, specifically what steps will be taken?

Benchmarks were met in each area, however, we have identified a few areas of concern throughout this process: Additional equipment is needed to meet demand; Lack of qualified (in this very specialized field) Adjunct faculty available to cover additional sections.

When will this be completed? 2/14/2005

Benchmark 2

The components within the three Terminal Projects (3) will be successfully completed by 100% of the students at a level not less than 90% for each project.

Assessment Method 2

Read, print and interpret welding symbols and positions to create welding fixture in various alloys in ATW 8320, Tungsten Inert Gas, Final Project.

Benchmark Scheduled To Be Assessed: 5/1/2004

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

Findings 2

2003-2004 Of 17 students, 100% achieved the benchmark level of 90% on TIG project. Analysis in May, results available in June of each academic year beginning June 2005.

Will other steps be taken as a result of these findings? Yes

If Yes, specifically what steps will be taken?

Benchmarks were met in each area, however, we have identified a few areas of concern throughout this process: Additional equipment is needed to meet demand; Lack of qualified (in this very specialized field) Adjunct faculty available to cover additional sections.

When will this be completed? 2/14/2005

Benchmark 3

The components within the three Terminal Projects (3) will be successfully completed by 100% of the students at a level not less than 90% for each project.

Assessment Method 3

Read print and interpret welding symbols and positions to create appropriate pipe design in ATW 8410, Pipe Welding, Final Project.

Benchmark Scheduled To Be Assessed: 5/1/2004

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

Findings

2003-2004 Of 9 students, 100% achieved the benchmark level of 90% on Pipe project. Analysis in May, results available in June of each academic year beginning June 2005.

Will other steps be taken as a result of these findings? Yes

If Yes, specifically what steps will be taken?

Benchmarks were met in each area, however, we have identified a few areas of concern throughout this process: Additional equipment is needed to meet demand; Lack of qualified (in this very specialized field) Adjunct faculty available to cover additional sections.

When will this be completed? 2/14/2005

Learning Outcome

Acquisition of skills and abilities that meet or exceed needs for career or personal development growth.

Benchmark 1

80% of student respondents rate program beneficial to their career or personal development goals one to three years after program completion.

Assessment Method 1

Survey students returning to acquire additional skills one to three years later for perceptions of how certificate prepared them for the future.

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 2

80% of employer respondents rate the certificate content and student's resultant skill level as appropriate for their industry.

Assessment Method 2

PROE surveys and general comments from Advisory Committee employer-members regarding the skills obtained and appropriateness of the certificate content from an industry standpoint.

Benchmark Scheduled To Be Assessed:

5/1/2004

Assessment Results Sent To Office of Assessment & Effectiveness:

6/1/2004

Findings 2

Assessment method was not implemented.

Recommendations for Welding Certification June 2, 2006

- The College should review safety issues. Due to the nature of the labs no classes should be above welding.
- At this time no full-time faculty spearheading the program. Appears the college had hired a full-time faculty or Welding who is now overseeing another program. Presently a parapro and one adjunct teaching the courses.
- Welding is seeing a shift in preparing more students to receive the college certificate versus just upgrading of skills.
- Space and safety concerns could be addressed by the possible new building which could also allow the program to meet the needs of those just entering for skill development.
- If the new building is not an option that go to Curriculum to lower seat count to 20 for lab purposes and safety issues...
- Need to have regular advisory committee meetings to determine the needs of employers and to plan for the new building potential.
- Go to College Equipment Task Force for equipment request.
- Bring program needs forward to AH Budget and Planning Committee. Prepare a phasing model/plan for program needs.
- Do a survey with Marty Orłowski re to determine the need for enhancing the Welding program and how many students might graduate with an AGS and a Welding certificate.
- Look at special topics for offering more courses or certificate of accomplishments for skill development.
- Research where students are employed after completing the courses and if these courses help students to find initial employment at higher pay, or if employed do they increase their pay? Stats provided by the OAS states that Welding as an occupation will decrease in the next 10 years. There is a discrepancy between stats and interpretation by OAE and program coordinator.
- Advancement model and Tech Prep to be considered as options to further the review of this program and connect high school programs.