

Major Highlights

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CRC Follow-Up

**CIS Software Engineering Program
Major Highlights
November 2006**

Overview

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

Major Highlights

- During 2005-06, one out of the seven Program Dashboard measures fell below its established benchmark (red zone). Specifically, the percent (16.7%) of withdrawals in CIS courses was greater than the 15.0% trouble score. In total, 1,045 withdrawals were granted to CIS students during 2005-06.
- On the other hand, one out of the seven Program Dashboard measures exceeded its established benchmark (green zone). Mainly, the percent of minority students exceeded the target score of 18.8%.
- Overall, CIS sections are 80.6% filled to capacity which is slightly lower than the 83.2% college-wide level. Meanwhile, over the past three years 22% to 34% of offered CIS sections have been cancelled. During 2005-06 a total of 87 CIS sections were canceled down from the prior year when 182 sections were canceled.
- CIS enrollment, in terms of headcount and credit hours, has been declining for the last three consecutive years. In 2000-01 there were 38,772 CIS credit hours, and by 2005-06, the number had decreased to 23,364, a 40% decline.
- The percent of minority students enrolled in CIS courses has remained steady over the last three years. In 2005-06, 30.4% of CIS students were minority, which is higher than the college-wide average of 27.9%.
- The percent of students who successfully complete CIS courses is slightly below the college-wide student success rate. Nearly sixty-four (63.6%) percent of CIS students receive a grade of "C" or higher, compared to 68.2% college-wide.
- Since the program's inception in July 2004, there have been four students who've received an Associates Degree and one student who received a Certificate in Systems Analysis, all during academic year 2005-06.
- Occupations associated with Computer Software Engineering 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 CIS Software Engineering program has identified two Learning Outcomes along with three Benchmarks. At least one additional Learning Outcome needs to be identified in order to meet established criteria pertaining to program assessment plans. Between January 2005 and October 2006, none of the Benchmarks have been assessed.
- The current program assessment plan lacks specific dates when each assessment activity will occur.

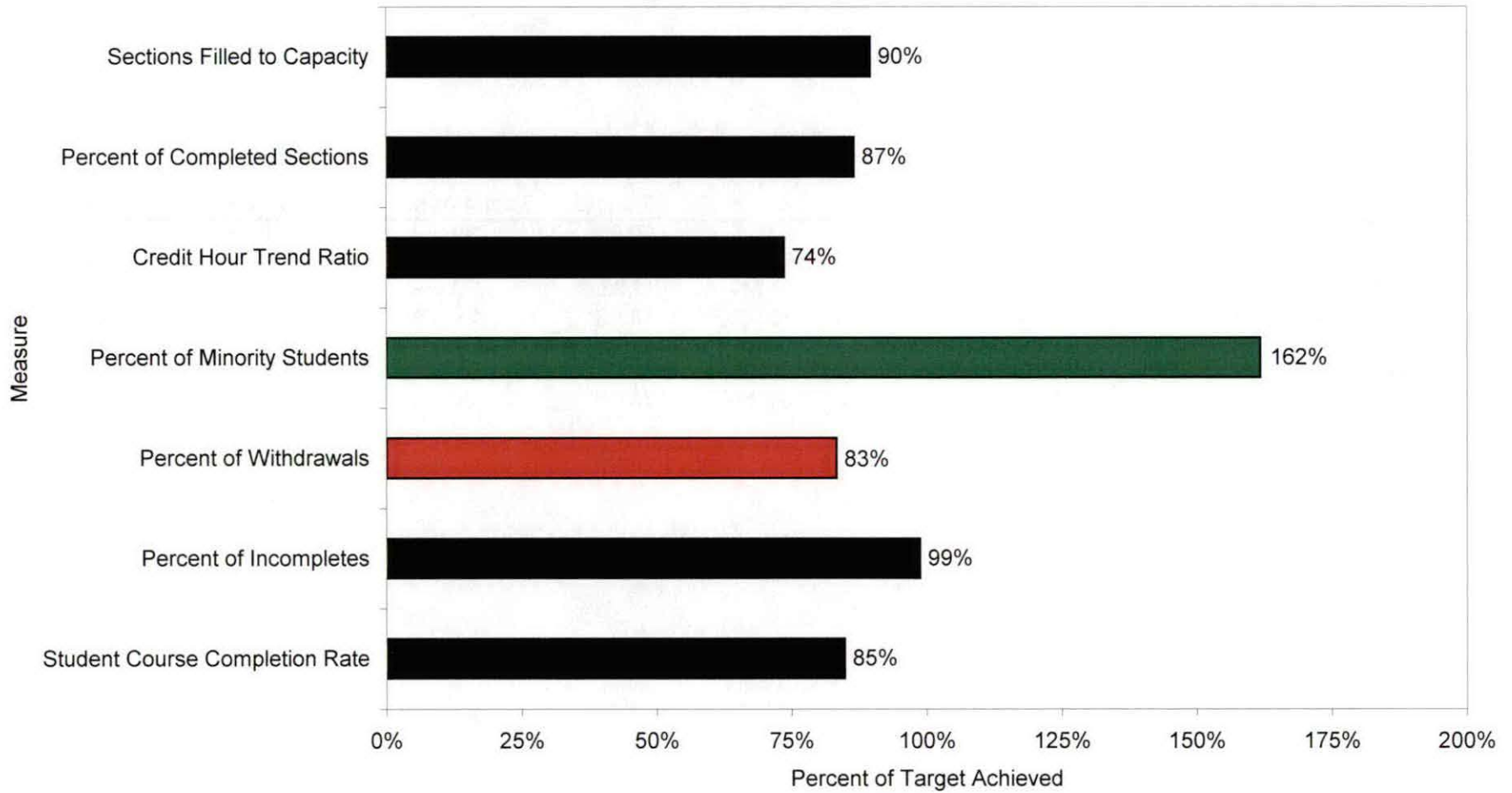
Oakland Community College Program Dashboard Report 2005-06

Computer Information Systems CIS Dashboard Score: 8.98

Measures	Benchmarks			Percent of Target Achieved	Weight	Weighted Score
	Current Score	Trouble Score	Target			
Sections Filled to Capacity	80.6%	75.0%	90.0%	89.6%	18.0%	1.61
Percent of Completed Sections	77.9%	75.0%	90.0%	86.6%	14.2%	1.23
Credit Hour Trend Ratio	0.92	0.71	1.25	73.6%	15.3%	1.13
Percent of Minority Students	30.4%	16.9%	18.8%	161.7%	6.1%	0.99
Percent of Withdrawals	16.7%	15.0%	0.0%	83.3%	12.0%	1.00
Percent of Incompletes	1.3%	3.0%	0.0%	98.7%	7.9%	0.78
Student Course Completion Rate	63.6%	60.0%	75.0%	84.8%	26.5%	2.25

Oakland Community College Percent of Target Achieved 2005-06

Computer Information Systems CIS



Oakland Community College Program Dashboard

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

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

Program Dashboard Detail Report

Prefix CIS
Title Computer Information Systems

	Program			College Wide
	2005-06	2004-05	2003-04	2005-06
Sections Filled to Capacity	80.6%	79.8%	84.0%	83.2%
Percent of Completed Sections	77.9%	65.8%	77.7%	86.6%
Headcount Trend Ratio	0.93	0.86	0.89	1.02
Credit Hour Trend Ratio	0.92	0.85	0.89	1.02
Percent of Minority Students	30.4%	30.8%	30.0%	27.9%
Percent of Withdrawals	16.7%	16.4%	16.0%	17.8%
Percent of Incompletes	1.3%	1.5%	0.9%	1.6%
Student Course Completion Rate	63.6%	64.7%	59.3%	68.2%
Dashboard Score	8.98	8.71	8.82	

Sections Filled to Capacity

Prefix CIS

Prefix Title Computer Information Systems

	2005-06	2004-05	2003-04
Total Students	6,410	5,937	7,369
Total Capacity	7,950	7,444	8,768
Sections Filled To Capacity	80.6%	79.8%	84.0%

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 CIS

Prefix Title Computer Information Systems

	2005-06	2004-05	2003-04
Active Sections	306	350	327
Cancelled Sections	87	182	94
Total Sections	393	532	421
Percent of Completed Sections	77.9%	65.8%	77.7%

Definition:

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

Methodology:

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

Headcount Trend Ratio

Prefix CIS

Prefix Title Computer Information Systems

	2005-06	2004-05	2003-04
Headcount Year 1	7,942	9,535	10,430
Headcount Year 2	7,369	7,942	9,535
Headcount Year 3	6,072	7,369	7,942
Headcount Year 4	6,441	6,072	7,369
Headcount Period 1	7,128	8,282	9,302
Headcount Period 2	6,627	7,128	8,282
Headcount Ratio	0.93	0.86	0.89

Definition:

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

Methodology:

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

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

- a. $\text{Year 1} + \text{Year 2} + \text{Year 3} / 3 = \text{Period 1}$
- b. $\text{Year 2} + \text{Year 3} + \text{Year 4} / 3 = \text{Period 2}$
- c. $\text{Period 2} / \text{Period 1} = \text{Ratio}$

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

Credit Hour Trend Ratio

Prefix CIS

Prefix Title Computer Information Systems

	2005-06	2004-05	2003-04
Credit Hour Year 1	29,784	35,840	38,772
Credit Hour Year 2	27,165	29,784	35,840
Credit Hour Year 3	22,000	27,165	29,784
Credit Hour Year 4	23,364	22,000	27,165
Credit Hour Period 1	26,316	30,930	34,799
Credit Hour Period 2	24,176	26,316	30,930
Credit Hour Ratio	0.92	0.85	0.89

Definition:

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

Methodology:

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

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

- a. $\text{Year 1} + \text{Year 2} + \text{Year 3} / 3 = \text{Period 1}$
- b. $\text{Year 2} + \text{Year 3} + \text{Year 4} / 3 = \text{Period 2}$
- c. $\text{Period 2} / \text{Period 1} = \text{Ratio}$

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

Percent of Minority Students

Prefix CIS

Prefix Title Computer Information Systems

	2005-06	2004-05	2003-04
Minority Students	1,463	1,437	1,658
Total Students	4,811	4,670	5,533
Percent of Minority Students	30.4%	30.8%	30.0%

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 CIS

Prefix Title Computer Information Systems

	2005-06	2004-05	2003-04
Total Withdrawals	1,045	947	1,112
Total Grades	6,253	5,789	6,931
Percent of Withdrawals	16.7%	16.4%	16.0%

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 CIS

Prefix Title Computer Information Systems

	2005-06	2004-05	2003-04
Total Incompletes	79	89	64
Total Grades	6,253	5,789	6,931
Percent of Incompletes	1.3%	1.5%	0.9%

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 CIS

Prefix Title Computer Information Systems

	2005-06	2004-05	2003-04
Successful Grades	3,979	3,746	4,108
Total Student Grades	6,253	5,789	6,931
Student Course Completion Rate	63.6%	64.7%	59.3%

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).

Institutional Research Report

**CIS/Software Engineering
Degree and Credit Hour Trends Reports
for
Curriculum Review Committee**



**OAKLAND
COMMUNITY
COLLEGE**

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CIS/Software Engineering Degree Trends Report

CIS.SWE Degree Trends Summary

CIS.SWE Ten-Year Trend

CIS.SWE Rate of Change

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College-Wide Ten-Year Trend

Computer Information Systems Credit Hour Trends Report

CIS Credit Hour Trends Summary

CIS Ten-Year Trend

CIS Three-Year Moving Mean

CIS Rate of Change

College-Wide Ten-Year Trend



OAKLAND
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Degree Trends Report
CIS Software Engineering Option
CIS.SWE
2005-06

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

**Oakland Community College
Degree Trends Report
CIS Software Engineering Option (CIS.SWE)
1996-97 through 2005-06**

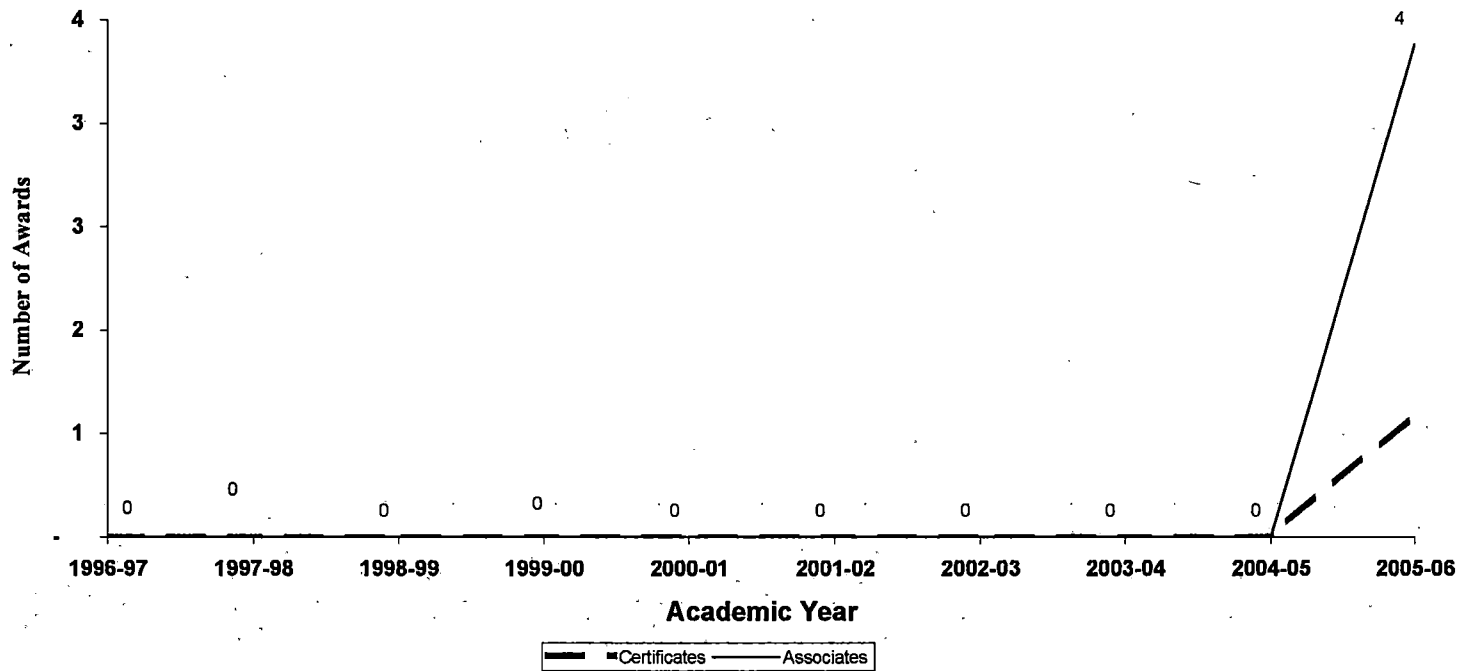
The Degree Trends Report is developed by the Office of Institutional Research based on data compiled from official college records which are submitted to the State of Michigan for the IPEDS (Integrated Post-Secondary Education System) Annual Degrees Conferred Report. The Degree Trends Report examines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

- Ten-year trend showing the annual awards conferred in CIS Software Engineering Option
- Rate of change in annual awards conferred in CIS Software Engineering Option
- The three-year Moving Mean for annual awards conferred in CIS Software Engineering Option
- Ten-year trend in awards conferred collegewide.

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

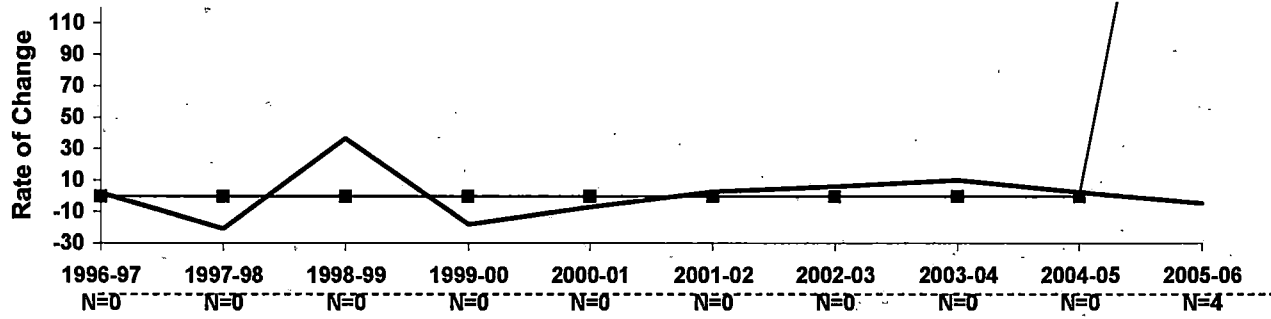
**Oakland Community College
Associate Degrees and Certificates Awarded
CIS Software Engineering Option
1996-97 through 2005-06**



<u>Academic Yr.</u>	<u>Certificates</u>	<u>Associates</u>
1996-97	0	0
1997-98	0	0
1998-99	0	0
1999-00	0	0
2000-01	0	0
2001-02	0	0
2002-03	0	0
2003-04	0	0
2004-05	0	0
2005-06	1	4

**Oakland Community College
Rate of Change in Annual Awards
College-Wide
1996-97 through 2005-06**

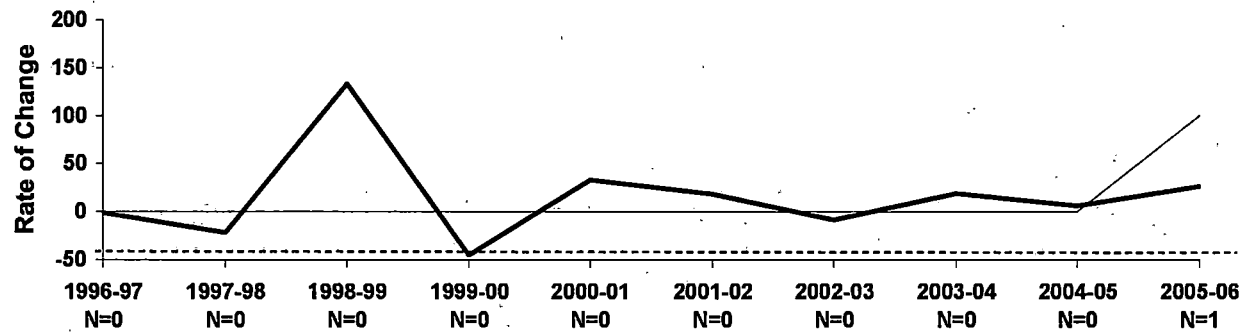
Associate Degrees



Academic Year, N = Number of Program Degrees

— Collegewide ■ Program Rate of Change

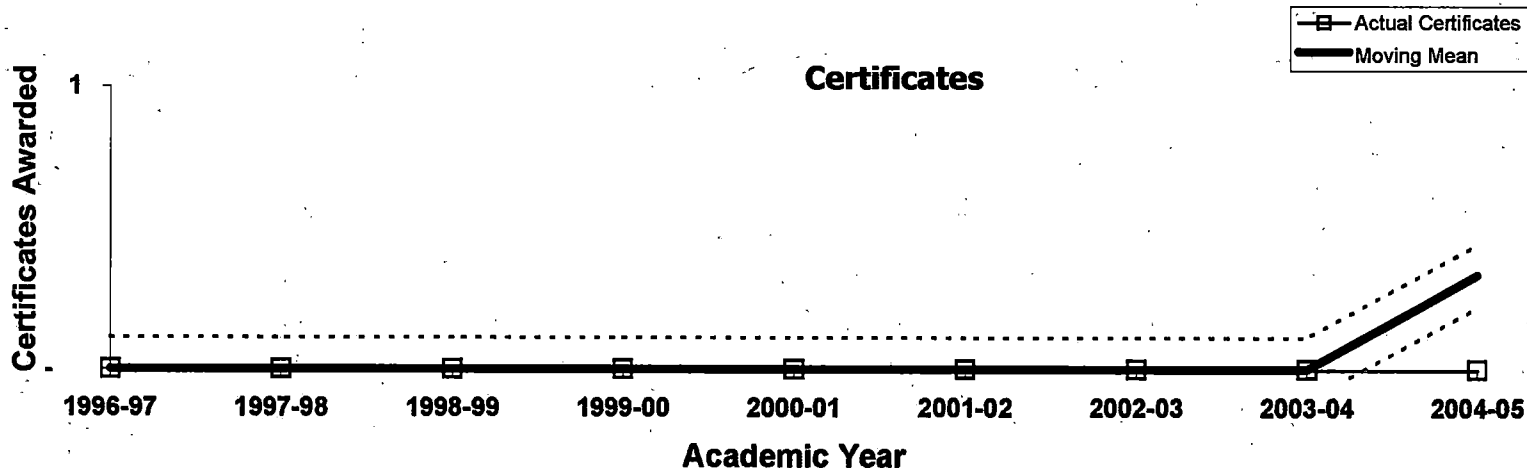
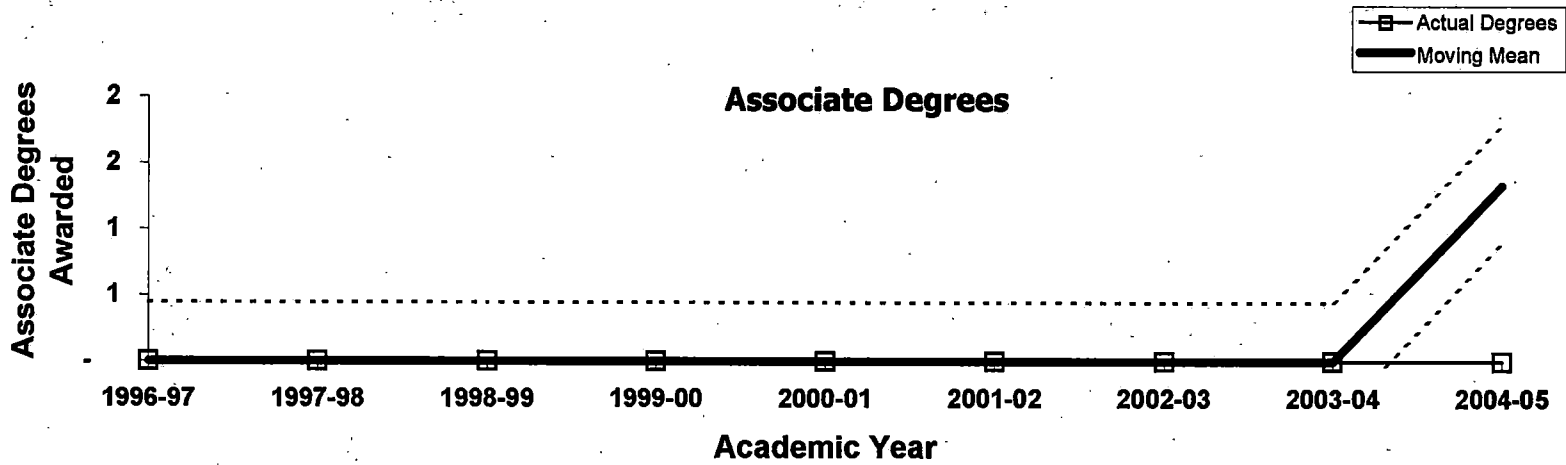
Certificates



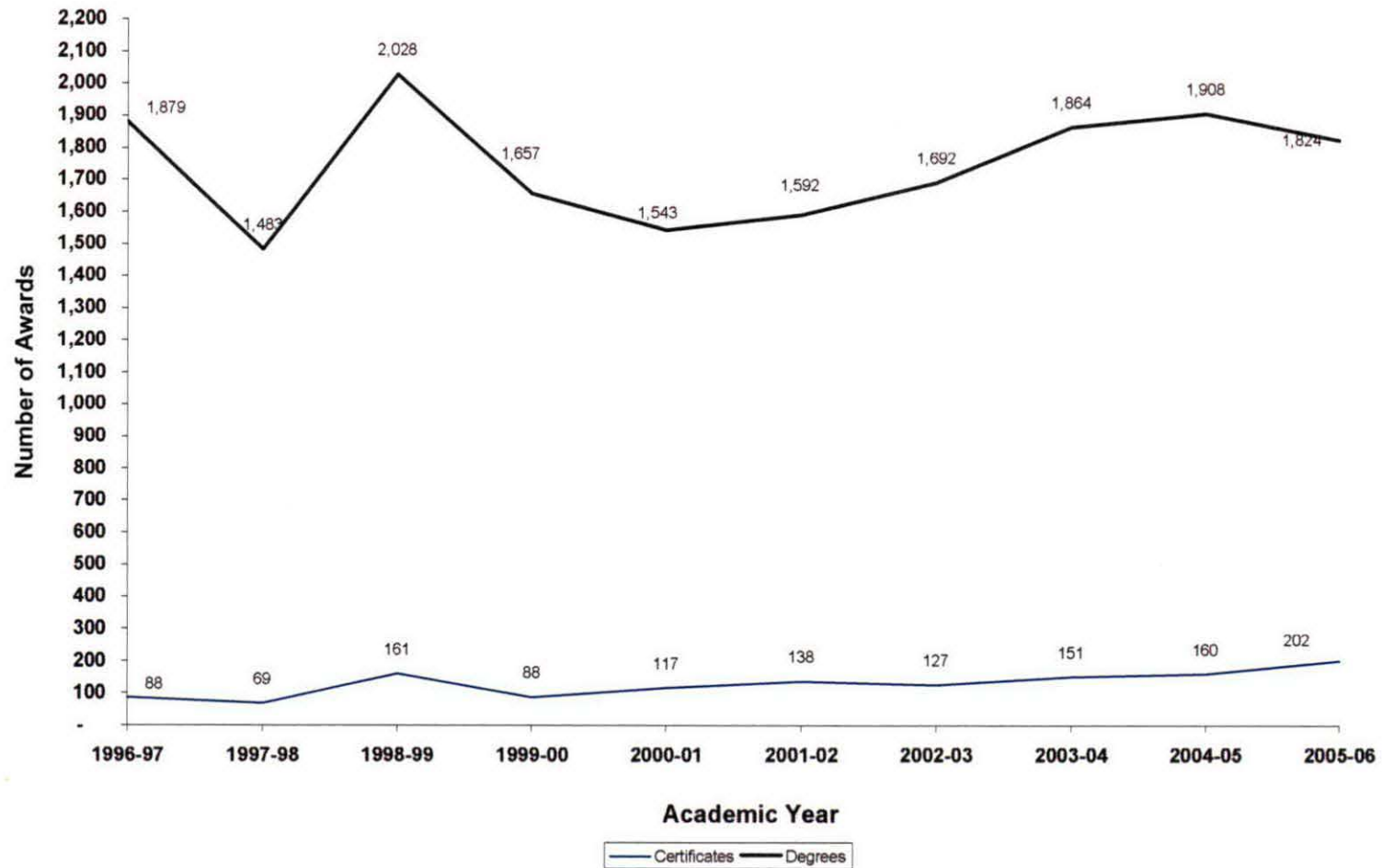
Academic Year, N = Number of Program Certificates

— College-wide — Program Rate of Change

**Oakland Community College
 Three Year Moving Mean in Annual Awards
 CIS Software Engineering Option
 1996-97 through 2004-05**



**Oakland Community College
Associate Degrees and Certificates Awarded
College-Wide
1996-97 through 2005-06**





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**Credit Hour Trends Report
Computer Info Systems
CIS
2005-06**

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

**Oakland Community College
Credit Hour Trends Report
Computer Info Systems
1995-96 through 2005-06**

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.

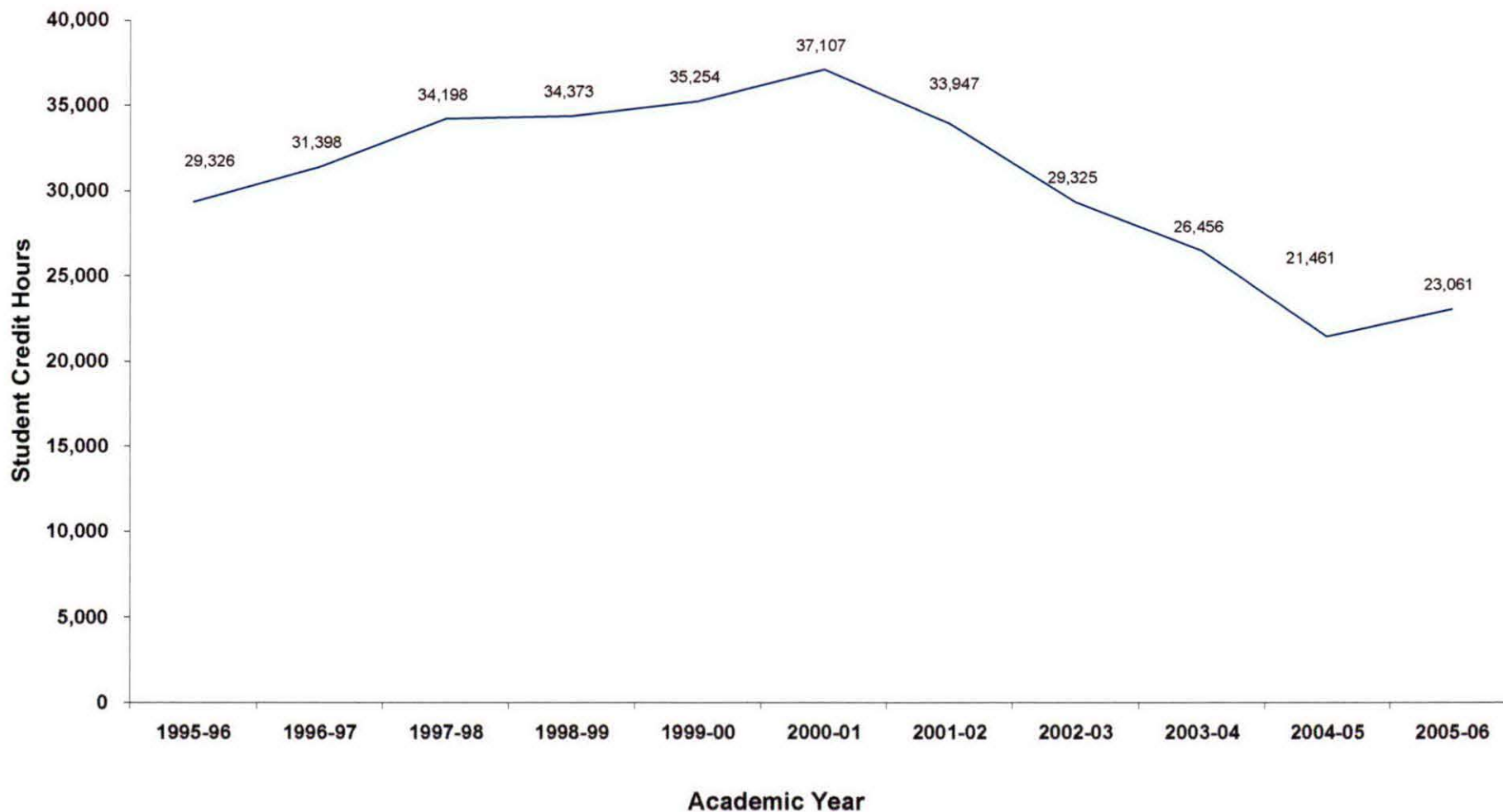
Trends over a specified period of time are illustrated by the following graphs for Computer Info Systems.

- 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.

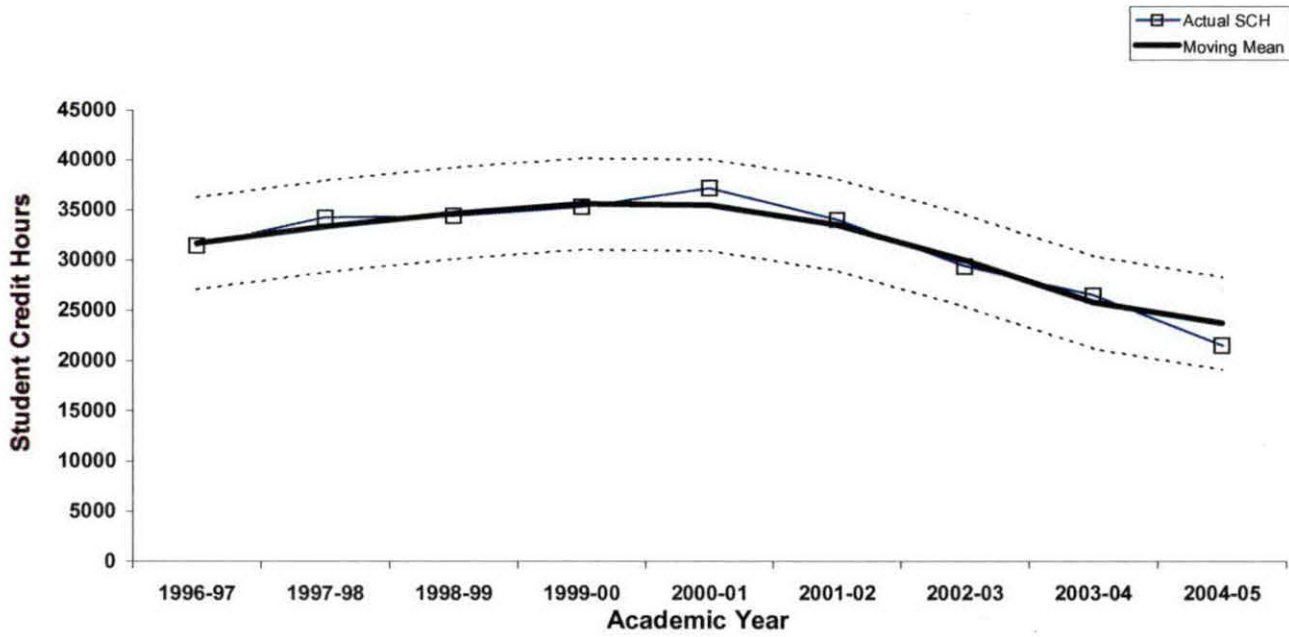
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**Oakland Community College
Ten-Year Trend in Student Credit Hours
Computer Info Systems
1995-96 through 2005-06**

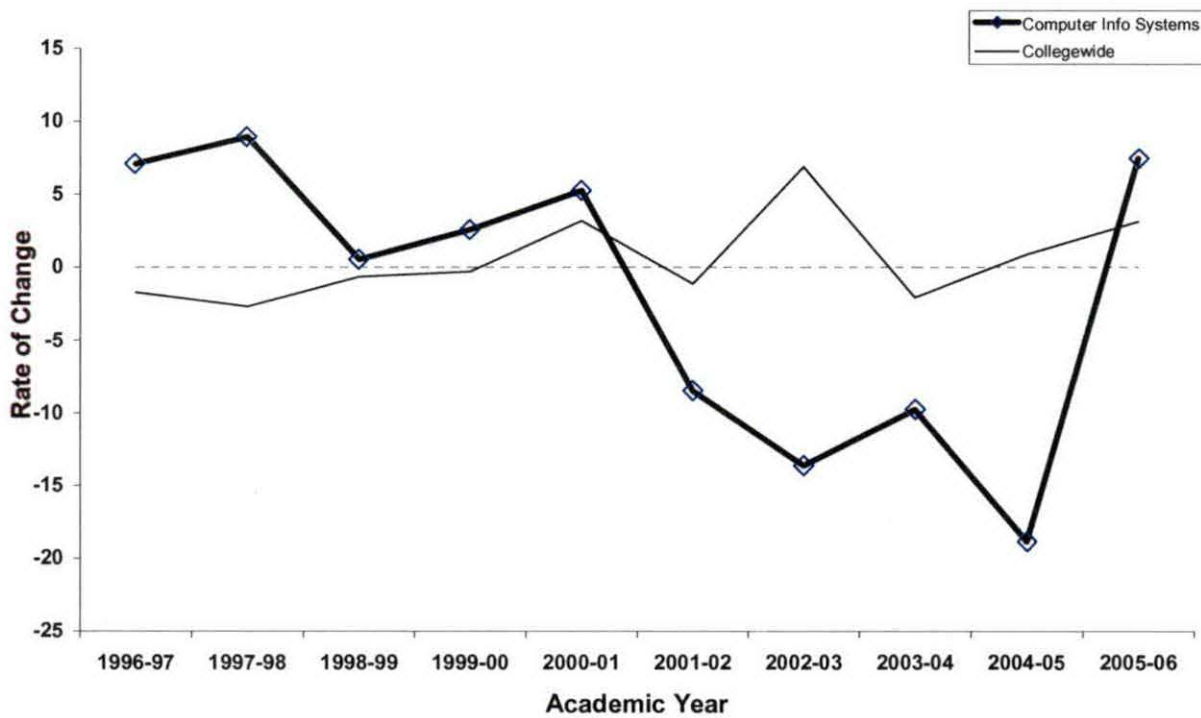
	1995-96 SCH	1996-97 SCH	1997-98 SCH	1998-99 SCH	1999-00 SCH	2000-01 SCH	2001-02 SCH	2002-03 SCH	2003-04 SCH	2004-05 SCH	2005-06 SCH	5-Year % Change	10-Year % Change
Computer Info Systems	29,326	31,398	34,198	34,373	35,254	37,107	33,947	29,325	26,456	21,461	23,061	-37.9	-21.4
College Wide Totals	451,159	443,471	431,521	440,448	438,997	453,054	447,928	478,827	468,777	472,892	487,597	7.6	8.1



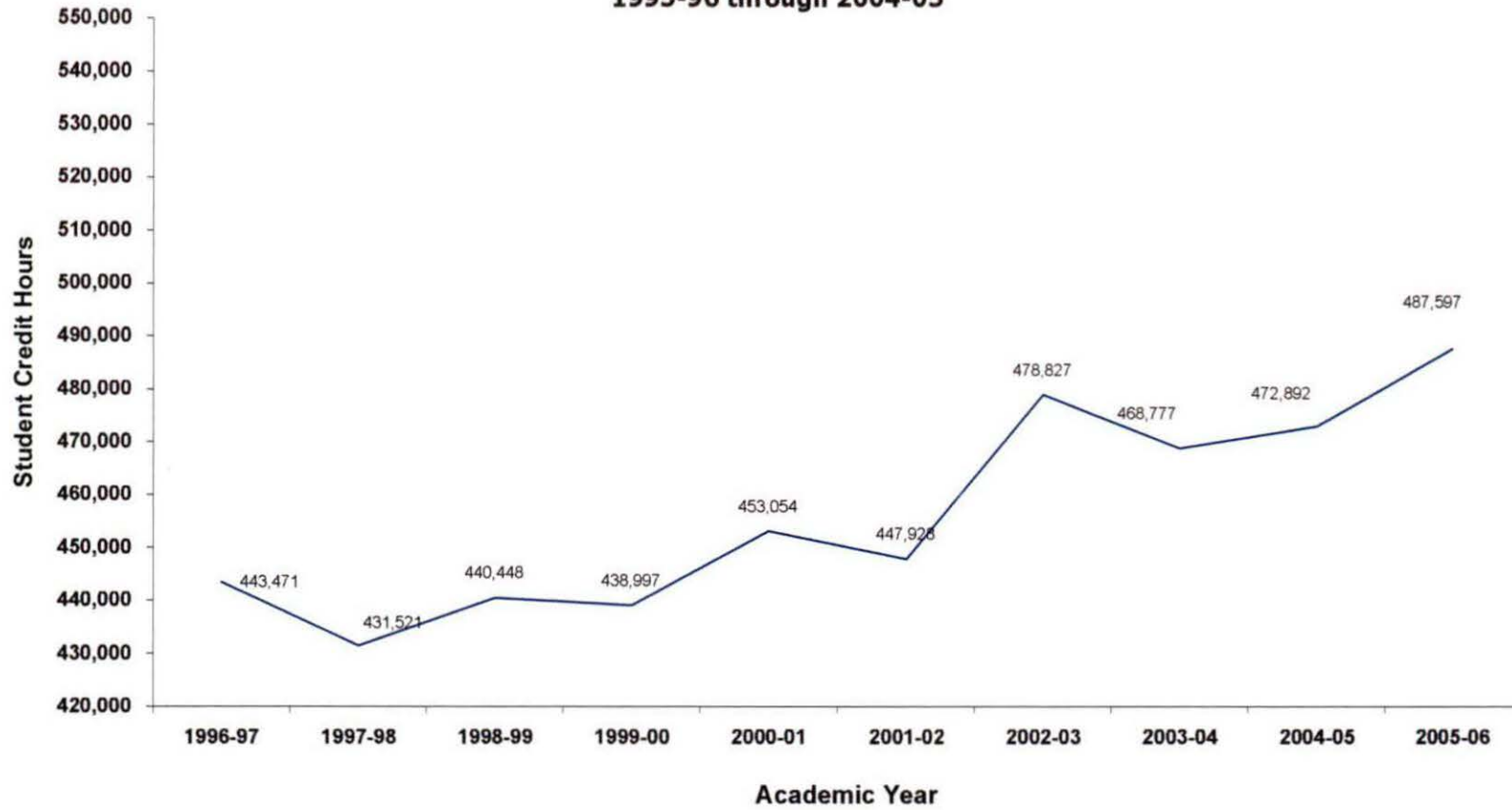
Oakland Community College
 Three-Year Moving Mean
 Computer Info Systems
 1996-97 through 2004-05



Rate of Change in Student Credit Hours 1996-97 through 2005-06



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



1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
443,471	431,521	440,448	438,997	453,054	447,928	478,827	468,777	472,892	487,597

Occupational Projections (2005 – 2015)

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

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

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

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

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

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

Data presented in the following tables include:

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

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

Computer Software Engineering Related Occupations (2005 - 2015)

SOC Code	Name	Base Year	Five Year	Ten Year	New Jobs	Rplmnt Jobs	% New Jobs	% Rplmnt Jobs	% New & Rplmnt	Earnings
15-1021	Computer Programmers		10,535	10,431	9,867	-669	2,512	-6.0%	24.0%	17.0% \$63,586
15-1031	Computer Software Engineers, Applications		6,324	7,712	8,839	2,515	613	40.0%	10.0%	49.0% \$73,320
15-1032	Computer Software Engineers, Systems Software		2,769	3,166	3,537	769	269	28.0%	10.0%	37.0% \$71,698
Totals:		19,628	21,309	22,243	2,615	3,394				

SOC Code 15-1021

Name Computer Programmers

Definition: Convert project specifications and statements of problems and procedures to detailed logical flow charts for coding into computer language. Develop and write computer programs to store, locate, and retrieve specific documents, data, and information. May program web sites. Examples: Computer Programmer Aide, Mainframe Programmer, Systems Programmer.

SOC Code 15-1031

Name Computer Software Engineers, Applications

Definition: Develop, create, and modify general computer applications software or specialized utility programs. Analyze user needs and develop software solutions. Design software or customize software for client use with the aim of optimizing operational efficiency. May analyze and design databases within an application area, working individually or coordinating database development as part of a team. Exclude "Computer Hardware Engineers" (17-2061). Examples: Applications Developer, Programmer Analyst, Software Designer

SOC Code 15-1032

Name Computer Software Engineers, Systems Software

Definition: Research, design, develop, and test operating systems-level software, compilers, and network distribution software for medical, industrial, military, communications, aerospace, business, scientific, and general computing applications. Set operational specifications and formulate and analyze software requirements. Apply principles and techniques of computer science, engineering, and mathematical analysis. Examples: EDP Systems Engineers

Program Assessment Plan

CIS Software Engineering Option

Statement of Purpose

To prepare students for careers in industry and business, update students' education for an existing career, or to prepare students for transfer to baccalaureate programs. The specific goal of the program is to graduate competent software engineers who have a fundamental knowledge of object oriented programming principles.

Catalog Description

The Computer Information Systems (CIS) Associate Degree program is designed to provide a solid foundation in the fundamental skills that are generally required to analyze system requirements and design solutions or, to support and manage the application of technology resources. These basic skills are routinely required by many different industries and higher-level educational programs. Four degree options of Systems Analysis, Computer Support, Homeland Security , or Software Engineering are available. Each option begins with core courses of information system fundamentals, database systems, networking, web systems, and software development. Additional courses are chosen in one area of specialization to complete the option requirements. Current computer tools and an emphasis on practical application provide a relevant learning environment.

Program Assessment Plan

CIS Software Engineering Option

Learning Outcomes

Students will have the ability to implement fully documented and correctly functioning code that implement server-side web-based computer programs.

Benchmark	Assessment Method	Timeline
1. (External assignment) 100% of the students who received a grade of C or better in each of the degree core or required option courses will produce one or more fully documented server-side web-based computer programs that include the generation of HTML, respond to user HTML FORM input, and access a database. The program must be 90% functional.	The instructor will evaluate all problem solutions.	12/06
2.		
3.		
4.		
5.		

Program Assessment Plan

CIS Software Engineering Option

Learning Outcomes

Students will have the ability to implement fully documented and correctly functioning object-oriented code.

Benchmark	Assessment Method	Timeline
1. (External assignment) 100% of the students who received a grade of C or better in each of the degree core or required option courses will produce one or more fully documented computer programs that utilize basic programming and object-oriented programming techniques in Java, including flow control structures, data structures, graphical user interfaces and event handling. The program must be 90% functional.	The instructor will evaluate all problem solutions. Assessments will be reviewed and graded within guidelines provided by OCC.	12/06
2. (External assignment) 100% of the students who received a grade of C or better in each of the degree core or required option courses will produce one or more fully documented computer programs that utilize basic programming and object-oriented programming techniques in C++, including flow control structures, data structures, graphical user interfaces and event handling. The program must be 90% functional.	The instructor will evaluate all problem solutions.	
3.		
4.		
5.		

Computer Software Engineering Assessment Plan Observations

- Assessment plan needs a third learning outcome along with associated benchmarks and assessment methods.
- Learning outcome #1: ability to implement fully documented and correctly functioning object oriented code... benchmark #1, assessment method #1 has an incomplete timeline. The collection time is given as midterm of Fall with out a year designation or a submission to OAE date (please provide the missing dates).
- Benchmark #2: The first learning outcome has no timeline.
- Learning outcome #2 ability to implement fully documented and correctly functioning code that implements server-side web-based computer programs...benchmark #1 assessment method #1 is to be assessed Fall 2007 this timeline needs to be finished...when will the results be submitted to OAE?



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Curriculum Review Committee

CIS Review:

April 13, 2007

Software Engineering: Primary review
Systems Engineering follows same format
Multi Media needs revision

Recommendations:

- Catalogue course description review suggests minor course revisions for CIS 1050, CIS 1400, and CIS 2859. These changes to course descriptions are to go through the College Curriculum Committee next year.
- CIS needs to coordinate efforts across the college.
- CIS outcomes should be consistent across the college.
- Continue to work with the CIS SOAC facilitator to update CIS Assessment Plan and report current findings.
- Syllabi review for CIS 1050, 2555, and 2757 reflects a need to add the ADA statement. CRC recommends all faculty consider using a syllabi template on the RO H drive.
- Enrolment trends in 2001 decreased due to off shore scare, but it appears CIS projections are good except for Programmer.
- Since students are more interested in courses than certificates, CIS might review degree needs (only 4 graduated in 3 years). Since students cannot be a Systems Analyst without a bachelor's degree, it might serve students better to consider a Liberal Arts degree with a concentration in CIS Systems Analysis, etc. for transferability.
- Survey of faculty recommended the program to be more competitive. CIS discipline might review how OCC compares to other institutions.
- New website development needs continue in order to inform students and community of it offerings.
- Question? Should CIS 1050 or another course be a General Education requirement? Recommendation to be made to the GE committee.
- Consider interdisciplinary offerings of CIS courses and software. (Interior Design, Graphic Design as examples)

- Consider the integration of technical skills and more liberal arts for transfer students.
- Consider CIS Orientation so students and faculty are more aware of the CIS program.
- Multi Media degree needs revision (low enrollment). Recommend keeping internship course used by Photography.
- CIS courses transfer most as electives except for an agreement with Walsh and Lawrence. Need to increase articulation agreements to be more marketable. Consider 3+1. Ferris on site at AH.
- Consider a Gaming degree, certificate or CA.
- Consider courses in GPS.
- A strong need for internal marketing and student orientation surfaced. Work with the Office of Assessment & Effectiveness to go through the program planning model and design a student orientation.
- Continue to work with the college and OAE to see if continual upgrade of hardware and software can be considered separate from IT to stay current in the industry.