ANNUAL PROGRAM PLAN & REVIEW (INSTRUCTIONAL)
ASGC ADOPTED SPRING 2011

The purpose of this document is to collect information to be used by the college planning bodies IPC (Instruction Planning Council), APC (Administrative Planning Council), SSPC (Student Services Planning Council), Budget Planning Committee, and CPC (College Planning Council) and may be used for Program Improvement and Viability (PIV). Through this process, faculty have the opportunity to review the mission and vision of their department/program. Then, using multiple measures and inquiry, faculty will reflect on and evaluate their work for the purposes of improving student learning and program effectiveness. This reflection will identify steps and resources necessary to work towards the program vision including personnel, professional development, facilities, and equipment. *Faculty should use their judgment in selecting the appropriate level of detail when completing this document.*

The deadline for submission of the Annual Program Plan to the IPC is March 31. Complete this document in consultation with your Dean who will then submit a copy to IPC. Members of the IPC review the document and return their comments to the author for use in the next annual program plan.

Cañada College

Mission Statement

It is the mission of Cañada College to ensure that students from diverse backgrounds have the opportunity to achieve their educational goals by providing quality instruction in general, transfer, career, and basic skills education, and activities that foster students' personal development and academic success. Cañada College places a high priority on supportive faculty/staff/student teaching and learning relationships, responsive support services, and a co-curricular environment that contributes to personal growth and success for students. The College is committed to the students and the community to fulfill this mission.

Vision

Cañada College ensures student success through personalized, flexible, and innovative instruction. The College infuses essential skills and competencies throughout the curriculum and assesses student learning and institutional effectiveness to make continuous improvement. Cañada responds to the changing needs of the people it serves by being involved in and responsive to the community, developing new programs and partnerships and incorporating new technologies and methodologies into its programs and services.

Cañada College

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Document Map:

Cañada College

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Note: To complete this form, **SAVE** it on your computer, then send to your Division Dean as an **ATTACHMENT to an e-mail message.**

Department/Program Title: Engineering and CIS **Date submitted:** March 31, 2014

1. Key Findings:

2. Planning Group (include PT& FT faculty, staff, stakeholders)
List of names and positions:
Amelito Enriquez - Engineering FT faculty
Bill Schwarz - CIS FT faculty

3. Writing Team and Contact Person:
Amelito Enriquez, enriquez@smccd.edu, 650-306-3261
Bill Schwarz, schwarzb@smccd.edu, (650) 306-3253

4. Program Information

A. Program Personnel
Identify all personnel (faculty, classified, volunteers, and student workers) in the program:

FT Faculty Amelito Enriquez, Bill Schwarz,
PT Faculty FTE Brett Baker (.36), Nick Langhoff (.29), Lance Lund (.29), Ridge McGhee (.29)
FT Classified none
PT Classified (hrs/wk) Justine Walsh (20 hrs/wk, shared with Physics) **Volunteers** none
Student Workers none

B. Program mission and vision
Include the purpose of the program, the ideals the program strives to attain, and whom the program serves. The program mission and vision must align with the college's mission and goals. (200 word limit)

Cañada College's Engineering and CIS programs are transfer programs that offer the lower-division courses needed by students to transfer to four-year computer science programs or engineering programs in any field of engineering. The mission of the two programs is to educate students from a diverse population to become productive members of the engineering/computer science professions and society at large. Each department combines excellence in teaching theoretical principles and concepts with practical hands-on experience and the development of technical proficiency and communications skills. The departments work closely with the College's Mathematics, Physics, and Chemistry departments, as well as the College's Student Services Division and four-year engineering and computer science programs to maximize students' opportunity for timely completion of courses and successful transfer. Although

primarily transfer programs, courses are also available for students who are seeking to update job skills related to engineering and computer science. Engineering and computer science students receive academic support services and professional development opportunities from the College's STEM Center (including the Mathematics, Engineering, and Science Achievement (MESA) Program).

C. Expected Program Student Learning Outcomes

Tool: **TracDAT folders in the SLOAC sharepoint.** Click on the link below to access your folder and log in with your complete smccd e-mail account, ex:smithj@smccd.edu and password http://sharepoint.smccd.edu/SiteDirectory/CANSLOAC

List expected Program Student Learning Outcomes (PSLOs) (minimum of 3) and assessment tools for each.

Guideline: List knowledge, skills, abilities, or attitudes upon completion of program or significant discipline work and list assessment tools. Can be copied from Tracdat.

PLO: Students completing this program will be able to:	**Assessment Plans***
Apply knowledge of math, science, and engineering or computer science to identify, formulate, and solve engineering/computer science problems.	Assessed cumulatively through scores in tests, assignments and projects in courses.
Communicate effectively and work well in situations that require teamwork.	Group Projects/Labs: Lab courses CIS 250 Engr 100, 111, 210, 261, 270
Design and perform tests or experiments, analyze and interpret data, and prepare a report summarizing the results of the tests or experiments.	Labs/lab reports/programming assignments CIS 118, 250 Engr 100, 111, 210, 261, 270
Develop a design or system given a set of requirements and specifications.	Projects (individual or group) CIS 118, 250 Engr 100, 210, 270
Use techniques, skills, and modern engineering and computer tools necessary for engineering or computer science practice	Projects in Engr 100, 210, 270, 261, CIS 250

Direct assessment of PLO1, PLO2, PLO3, and PLO4 showed satisfactory results.

Most of the course-level SLO assessment results have been satisfactory. Of the 33 course-level SLO results that have been collected, only three have not met the criterion for success. Course level SLO assessments that have yielded unsatisfactory results have been used to make changes in specific courses (length, depth and order of coverage of topics; methods of delivering content and assessing student learning, etc.)

Due to limited Program Student Learning Outcomes assessment results and the fact that all the assessment results have met the set criteria, the annual SLO assessment cycle has not resulted in any major changes in the programs. Preliminary Program Student Learning Outcomes assessment results have been collected and uploaded to Tracdat for PLOs #1, #2, #3, and #4 using data for engineering students who transferred or received an AS degree at the end of spring 2012 and spring 2013. More assessment results will be available for students receiving their AS degrees at the end of spring 2014.

5. Response to Previous Annual Program Plan & Review

Tool: http://sharepoint.smccd.edu/SiteDirectory/canio/ipc
(log in with your complete smccd e-mail account, ex: smithj@smccd.edu and password)

List any recommendations for the program and your responses to these recommendations based on previous Annual Program Plan and/or CTE Professional Accreditation report.

Note: The only recommendations from the 2013-14 Comprehensive Program Review was to include a list of the professional development activities (including conferences attended) in which the program faculty has participated. In response, list of conferences, publications and presentations has been included in the present document.

Guideline: Original documents can be linked or attached, as needed.

6. Curricular Offerings *(current state of curriculum and SLOAC)*

All curriculum and SLOAC updates must be completed when planning documents are due.
SLOAC = Student Learning Outcomes Assessment Cycle
Tools: **TracDAT folders in SLOAC** sharepoint http://sharepoint.smccd.edu/SiteDirectory/CANSLOAC
Curriculum Committee http://sharepoint.smccd.edu/SiteDirectory/cancurriculum/

A. Attach the following TracDat and Curriculum data in the appendix:

- List courses, SLOs, assessment plans, and results and action plans (attach report from TracDAT folders in SLOAC sharepoint).

- List courses with CORs over 6 years old (attach documents from Curriculum Committee)

Updates to COR have been submitted for the March 288th and April 11th Curriculum Committee meetings for the following courses:

- Engr 101 (Course Deletion)
- Engr 111 (Course Modification)
- Engr 260 (Course Modification)
- Engr 261 (Course Modification)
- CIS 118 (Update DE)
- CIS 250 (Update DE)
- CIS 262 (Update DE)

The rest of the courses have current CORs.

B. Identify Patterns of Curriculum Offerings

Guidelines: What is the planning group's 2-year curriculum cycle of course offerings by certificates and degrees? What is the ideal curriculum cycle? Discuss any issues.

Engineering curriculum cycle of course offerings

Fall Semester	Spring Semester
• Engr 111 - Surveying • Engr 210 - Graphics • Engr 410 - Computer-Aided Graphics • Engr 413 - Designing with CAD • Engr 240 - Engineering Dynamics • Engr 270 - Materials Science	• Engr 100 - Introduction to Engineering • Engr 215 - MATLAB • Engr 230 - Statics • Engr 260 - Circuits and Devices • Engr 261 - Circuits and Devices Lab

Strengths of the Engineering Curriculum:

- Curriculum is kept current by working closely with other community colleges and four-year engineering programs.
- All lecture courses are offered simultaneously as online courses, giving students flexibility in their schedules, and allowing students from other institutions to take the courses.
- Course offerings are coordinated with CSM's Engineering Department to provide maximum opportunity for students in the District to complete their transfer requirements in a timely manner.

Curriculum Issues

- For Engineering, a statewide AS degree for transfer is still under development. Three Transfer Model Curriculum (TMC) patterns for engineering are being developed - one for Computer Engineering, one for Electrical Engineering, and one for Aerospace/Civil/Mechanical Engineering. The most difficult aspect in developing these TMCs is staying within the 60-unit limit. A second round of vetting is scheduled to be completed by the end of April.
- A few universities (UC Berkeley, UCLA and Cal Poly San Luis Obispo) now have a course in Strength of Materials as one of their lower-division transfer requirements for mechanical and civil engineering students. The department should explore the viability of offering this course to ensure that students transferring to these universities are well prepared.

Current CIS curriculum cycle of course offerings

Fall Semester	Spring Semester
• CIS 118 – Intro to Computer Science • CIS 250 – OOP in C++ • CIS 252 – Data Structures in C++ • CIS 286 – OOP in Java • CIS 321 – Programming for the IPhone	• CIS 118 – Intro to Computer Science • CIS 250 – OOP C++ • CIS 242 – System Arch and Assembly Programming • CIS 321 – Programming for the IPhone

Strengths of the Computer Science Curriculum:

- Curriculum is kept current by working closely with other community colleges and four-year engineering programs, and reviewing the Transfer Degree Model.
- All lecture courses use the online systems, giving students 24/7 access to all course material.
- Course offerings are coordinated with Canada's Engineering Department, and the Computer Graphic Department to provide maximum opportunity for students in the District to complete their transfer requirements in a timely manner.

Curriculum Issues

- For Computer Information Systems, a statewide AS degree in 'Computer Science', has been developed, and has replaced the current CIS degree for transfer, along with 3 new Computer Science Certificates: CS C++, CS Java, CS Objective C. The Computer Science AS Degree matches the Transfer Model Curriculum (TMC) patterns for Computer Science. All have been completed and officially approved.

7. Program Level Data

A. Data Packets and Analysis from the Office of Planning, Research & Student Success and any other relevant data.

Tool: http://www.canadacollege.edu/inside/research/programreview/info_packet/info_packet.html

Guidelines: The data is prepared by the Office of Planning, Research & Student Success and is to be attached to this document. Include the following:

- Describe trends in the measured parameters.
- Reflect and analyze causes of trends.

ENGINEERING PROGRAM LEVEL DATA

a. Enrollment

Enrollment has been increasing steadily over the last five years, with unique headcount increasing by 143%, and the total enrollment count increasing by 119%. There was a slight decrease in course enrollment in 2011-2012 because of the enforcement of pre-requisite requirements for all courses at Cañada, which resulted in some students unable to register for engineering courses. Among these students are students in the District who have not completed the official pre-requisite courses, as well as non-District students who may have completed the courses equivalent to the required pre-requisites but had difficulty signing for Cañada courses because of the extra step needed to have their courses validated. This is particularly important for online students who could not readily come to campus and work on having this extra step accomplished in person. Subsequent to fall 2011, enrollment has continued to increase significantly.

Metric	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Unique Headcount	97	135	151	168	236
Total Course Enrollment	149	243	284	283	326

Note that an analysis of the enrollment per section is not included in this review because the numbers included in the Program Review Data packets are misleading. Many of the engineering lecture courses have two sections, one for on-campus and one for online students. These two sections, although listed as separate sections, are only counted as one load for the faculty. Hence, a direct comparison of the department's number of students per section with that of the College's average number of students per section would be misleading. A more appropriate comparison would be the department load, which is covered in the next section.

b. Department Efficiency

The table below summarizes the trend in the Engineering Department efficiency for the last five years. Both the WSCH and Load increased steadily from 2008-09 to 2010-11, and decreased in 2011-2012. From 2007-08 to 2009-10 academic years, the department's load is more than 10% lower than the College average load for the same period. For both 2010-11 and 2011-12 academic years, the department's load is higher than the college's average load.

Metric	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
WSCH	843	1124	1556	1290	1575
FTE	2	2.3	2.4	2.3	2.7
Load	442	480	659	551	579

The decrease for the 2011-2012 is again primarily due to the enforcement of the prerequisites which significantly impacted enrollment only in fall 2011. During the AY 2012-2013, despite the significant increase in the department head count, course enrollments and WSCH (22% increase from the previous year), the 5% increase in Load is more modest because of two factors. First, the HBA for almost all of the engineering courses were removed in response to the more stringent state requirements. Additionally, an additional section of Engr 210 was offered as part of the Bridge to Engineering Program for veterans, resulting in increased headcount and FTE without a corresponding increase in department Load.

c. Student Performance Profile

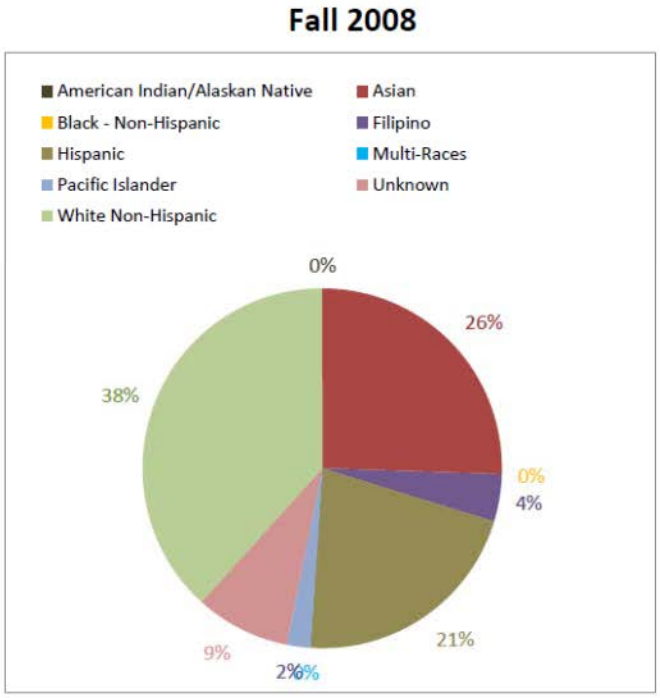
Metric	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Success Rate	77.0%	73.0%	82.0%	80.0%	82.0%
Retention Rate	87.0%	76.0%	85.0%	86.0%	87.7%

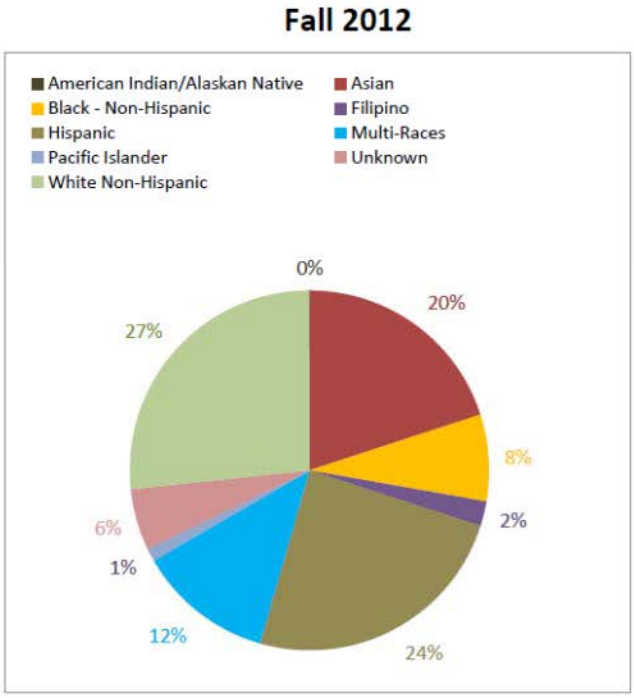
The Engineering Department's Student Performance Profile compares very well with the College's averages. Retention and Success rates for the department have been consistently higher than the College's for all five academic years. Success rate for the last three years are more than 10% higher than the College rate. The significant increases in both Retention and Success Rates for engineering courses may be attributed to the successful implementation of CCC Confer to deliver and archive lectures, allowing students from both on-campus and online sections to review recorded lectures on their convenience. The success and retention rates for the department can still be further improved if adjunct faculty implement CCC Confer to archive their lectures.

d. Student Demographics - Ethnicity

Metric	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Amer Ind/Alaskan Native	0%	0%	0%	0%	0%
Asian	20%	19%	25%	20%	19%
Black - Non-Hispanic	1%	1%	2%	2%	5%
Filipino	3%	5%	5%	5%	2%
Hispanic	30%	36%	31%	33%	20%
Multi-Races	0%	3%	5%	9%	11%
Pacific Islander	1%	1%	1%	2%	1%
Unknown	11%	10%	11%	8%	8%
White Non-Hispanic	34%	26%	21%	21%	24%

From 2008 to 2011, the percent share of each ethnicity has relatively remained the same except for White/Non-Hispanic, which has been decreasing, and the Multi-Races, which has been increasing. When compared to the ethnic distribution for the entire College, the main difference the higher enrollment rates for Asians in the department (around 20%) versus around 8% for the entire College. The higher percentage of Asians in engineering courses maybe attributed to two factors. First, nationwide, Asian Americans study engineering at higher rates than other ethnicities. Second, since Skyline College does not offer any engineering courses, many of their students come to Cañada for their engineering courses, and Skyline's Asian student population is higher than Cañada's. For the 2012-13 AY, the most significant changes are a decrease in the percentage of Hispanics accompanied by an increase for Black, Multi-Rates and White. The increase in the percentage of Multi-Races is a continuing trend while the increase for Black and White/Non-Hispanic students is primarily due to the cohort of veterans in the Bridge to Engineering for Veterans Program.





B. Analyze evidence of Program performance. Explain how other information may impact Program (examples are business and employment needs, new technology, new transfer requirements)

Tool: **TracDAT folders in SLOAC** sharepoint http://sharepoint.smccd.edu/SiteDirectory/CANSLOAC

Guidelines:

- Explain how the assessment plan for Program Student Learning Outcomes (listed on #3c) measures quality and success of each Program.
- Summarize assessment results of Program Student Learning Outcomes.
- Describe and summarize other data that reveals Program performance.
- Explain how changes in community needs, technology, and transfer requirements could affect the Program.

C. Other Considerations

Cañada College

ANNUAL PROGRAM PLAN & REVIEW (INSTRUCTIONAL)
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COMPUTER SCIENCE PROGRAM LEVEL DATA

a. Enrollment

Historical enrollment for the prior CIS program had been increasing, which illustrated the interest in Computer Science courses.

Metric	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Unique Headcount	39	56	66	98	61
Total Course Enrollment	80	103	103	178	88

Since the change over to the new 'Computer Science' degree program courses, the total course enrollment for the NEW CS course has been significantly increasing. (see table below)

	Spring 2013	Fall 2013	Spring 2014	Fall 2014 (projected)
Total Course Enrollment	61	99	151	225

The new Computer Science Degree and the three associated CS certificates has been well received. An increase in the number of course and the number of sections has been scheduled to meet the real and projected increase in headcount. This is particularly important for students so they can complete the CS Degree in the fewest number of semesters.

b. Department Efficiency

The table below summarizes the trend in the CIS Department efficiency for the last five years. They illustrate the CIS degree faculty load before it was converted into the new CS degree program. The WSCH and Load fluctuations below, illustrate the need for an improved CS courses and new CS degree program. They also illustrate the need for dedicated faculty.
To address the FTE issue, a full time faculty member dedicated to the teaching of CS courses has been hired in Spring 2013. To address the WSCH issue, a new degree program with a reworked set of course has been approved and is now in place.

Metric	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
WSCH	262	375	385	556	294
FTE	0.4	0.8	0.6	0.8	0.92
Load	654	469	641	696	319

The load/Efficiency numbers are expected to improve as the new CS program grows.

c. Student Performance Profile

Metric	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Success Rate	66.2%	45.6%	61.0%	42.1%	64.8%
Retention Rate	72.5.0%	66.0%	66.1%	59.6%	85.2%

For the prior CIS degree courses, Student Performance Profile was variable. Retention and Success rates for the department were inconsistent for the first for academic years. With the hiring of dedicated full time CS faculty in Spring 2013, the statistics show an improvement in student success and retentions.

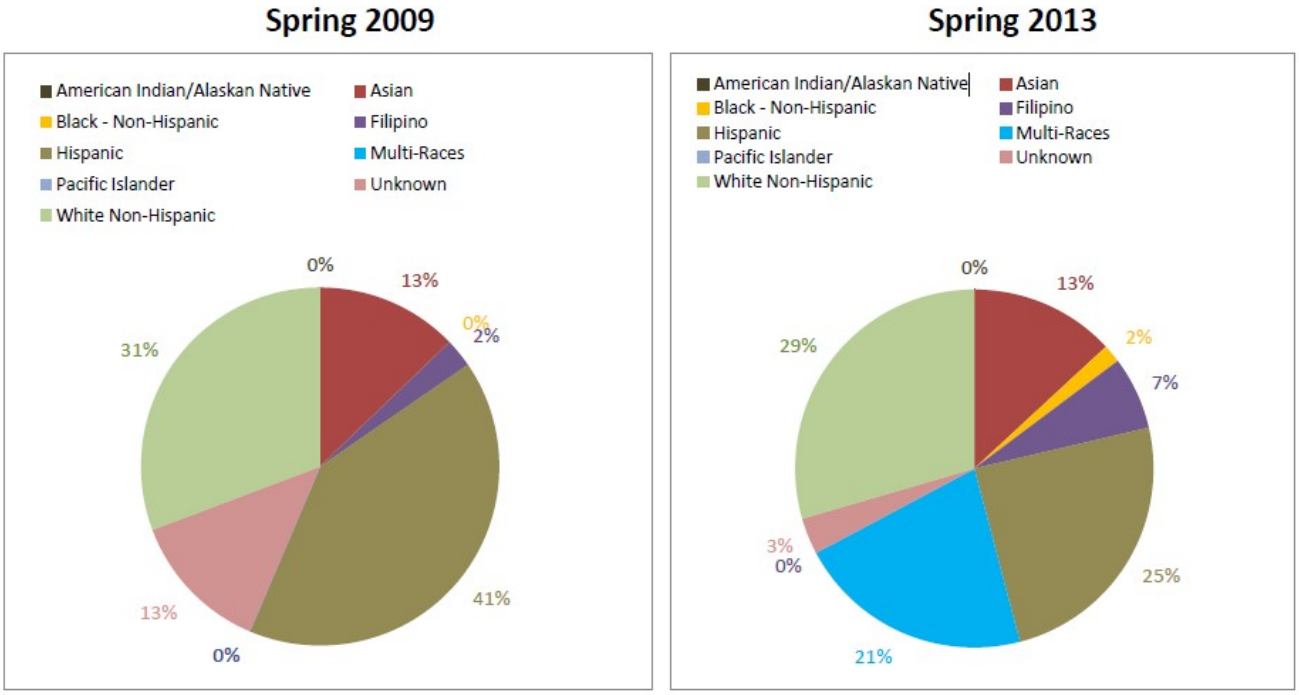
With the start of the new CS degree program, the success and retention is attributed to the successful implementation utilizing WebAccess for all classes, and hiring a new full time CS faculty member. This allowing students from both on-campus and online sections to review video lectures on their convenience.

d. Student Demographics - Ethnicity

Metric	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013
Amer Ind/Alaskan Native	0%	2%	0%	0%	0%
Asian	13%	14%	12%	14%	13%
Black - Non-Hispanic	0%	0%	2%	2%	2%
Filipino	3%	5%	2%	3%	7%
Hispanic	41%	39%	38%	24%	25%
Multi-Races	0%	5%	6%	7%	21%
Pacific Islander	1%	0%	0%	0%	0%
Unknown	13%	2%	6%	10%	3%
White Non-Hispanic	31%	33%	35%	39%	30%

From 2008 to 2013, the percent share of each ethnicity has relatively remained the same except for White/Non-Hispanic, which has been decreasing, and the Multi-Races, which has been increasing. When compared to the ethnic distribution for the entire College, the main difference the higher enrollment rates for Asians in the department (around 13%) versus around 8% for the entire College. The higher percentage of Asians in Computer Science courses maybe attributed to two factors. First, nationwide, Asian Americans study CIS at higher rates than other ethnicities. For the 2012-13 AY, the most significant changes are a decrease in the percentage of Hispanics accompanied by an increase for Black, Multi-Rates and White. The increase in the percentage of Multi-Races is a continuing trend

while the increase for Black and White/Non-Hispanic students is primarily due to the cohort of veterans in the Bridge to Engineering for Veterans Program.



B. Analyze evidence of Program performance. Explain how other information may impact Program (examples are business and employment needs, new technology, new transfer requirements)

Tool: **TracDAT folders in SLOAC** sharepoint http://sharepoint.smccd.edu/SiteDirectory/CANSLOAC

Guidelines:

- Explain how the assessment plan for Program Student Learning Outcomes (listed on #3c) measures quality and success of each Program.
- Summarize assessment results of Program Student Learning Outcomes.
- Describe and summarize other data that reveals Program performance.
- Explain how changes in community needs, technology, and transfer requirements could affect the Program.

C. Other Considerations

8. Action Plan

Include details of planning as a result of reflection, analysis and interpretation of data.

Guidelines:

- Describe data and assessment results for Program Student Learning Outcomes. Analyze and reflect on assessment results for Program Student Learning Outcomes and other measures of Program performance.
- Analyze and reflect on other evidence described in previous sections. Identify the next steps, including any planned changes to curriculum or pedagogy.
- Identify questions that will serve as a focus of inquiry for next year.
  - > Determine the assessments; set the timeline for tabulating the data and analyzing results.
  - > Describe what you expect to learn from the assessment efforts.

The action plan for the Engineering Department:

- Continue pursuing resources through federal grants: A proposal for the NSF S-STEM program was submitted and is scheduled to provide over $600,000 in scholarships from fall 2014 to spring 2019. Another successful grant proposal is a partnership with University of New Haven and UC Berkeley to study the development of engineering professional identity among non-traditional students. This research project is set to begin in June 2014. A proposal for NSF IUES program was submitted this semester. If funded, this grant program will develop online labs for engineering courses.
- Study the viability of offering Strength of Materials.
- Continue working with other CA community colleges and CSUs in developing state-wide course descriptors and model curricula for engineering.
- Continue working with Articulation Officer to keep articulation agreements current.

The action plan for the Computer Science Department is to:

- Continue offering more of the new courses and additional sections for the new Computer Science curriculum to meet the increase in demand.
- Participate in all campus events, like Career Days and Major days and High School feeder events that inform potential students about the new CS degree and certificates
- Promote the Computer Science Club and its associated company tours, speakers, game days and code competitions and create a long term network for CS majors.
- Further and promote an integrated curriculum and set of lectures for all the CS courses
- Hire additional CS professor for the growing program
- Continue working with the Articulation officer to keep articulation agreements current
- Insure the availability of CS tutors to increase student success

- Work with the STEM program to promote CS

9. Resource Identification

A. Faculty and Staff hiring requests

Guidelines:
- Explain clearly and with supporting data showing how hiring requests will serve Department/Division/College needs.
- Include information from the most recent Comprehensive Program Review or Annual Program Plan, whichever was last year's document.

B. Professional Development needs

Guidelines:
- List faculty and staff professional development activities.
- Describe faculty and staff professional development plans for next year.
- Explain how professional development activities improved student learning outcomes.

List of professional development activities for Amelito Enriquez:

- 2014 Alliance of Hispanic-Serving Institution Educators Conference, La Verne, CA, March 16-19, 2014.
- 2014 NSF I-Corps for Learning Closing Workshop, Crystal City, VA, February 26-28, 2014.
- 2014 California Alliance for Minority Participation Student Symposium, Irvine, CA, February 7-9, 2014.
- 2014 NSF PAESMEM Review Panel, Arlington, VA, January 27-28, 2014
- 2014 NSF I-Corps for Learning Workshop, Crystal City, VA, January 8-11, 2014
- 2013 STEM Tech Conference, Atlanta, GA, October 27-30, 2013.
- Engineering Liaison Council Fall 2013 Meeting, San Jose, CA, October 24-25, 2013.
- 2013 Society for the Advancement of Chicanos and Native Americans in Science Conference, San Antonio, TX, October 2-6, 2013
- NASA Space Grant Consortium Panel Review, Arlington, VA, July 29-31, 3013.
- 2013 American Society of Engineering Education Conference and Exposition, Atlanta, GA, June 23-26, 2013.
- 2013 American Society of Engineering Education Pacific Southwest Section Conference, Riverside, CA, April 18-28, 2013.
- Engineering Liaison Council Spring 2013 Meeting, Los Angeles, CA, April 11-12, 2013.
- 2013 US Department of Education Higher Education Programs Project Directors Meeting, Washington, DC, March 25-28, 2013.

- 2013 Workshop on the Impact of Pen and Touch Technology on Education (WIPTTE), Los Angeles, CA on March 21-23, 2013
- 2013 Alliance of Hispanic-Serving Institution Educators Conference, Jersey City, NJ, March 10-13, 2013.
- Academic Senate Academy: Science, Technology, Engineering, and Math (STEM) Academy, San Diego, CA on February 22-23, 2013.
- 2013 California Alliance for Minority Participation Student Symposium, Irvine, CA, February 8-10, 2013.

List of Publications:

- Enriquez, A. et. al., "Developing a Summer Engineering Program for Improving the Preparation and Self-Efficacy of Underrepresented Students," 2014 American Society of Engineering Education Conference and Exposition, Indianapolis, IN, June 15-18, 2014.
- Enriquez, A., "Enhancing the Success of Minority STEM Students by Providing Financial, Academic, Social, and Cultural Capital," 2014 American Society of Engineering Education Conference and Exposition, Indianapolis, IN, June 15-18, 2014.
- Enriquez, A., et. al., "Promoting Academic Excellence Among Underrepresented Community College Engineering Students through a Summer Research Internship Program," 2013 American Society of Engineering Education Conference and Exposition, Atlanta, GA, June 23-26, 2013.
- Enriquez, A., "Strengthening Community College Engineering Education Through Collaboration and Technology," 2013 American Society of Engineering Education Conference and Exposition, Atlanta, GA, June 23-26, 2013.
- Enriquez, A., et. al., "Preparing Underrepresented Students for Success in Engineering: Results and Lessons Learned from Four Years of the Summer Engineering Institute," 2013 American Society of Engineering Education Conference and Exposition, Atlanta, GA, June 23-26, 2013.
- Yadak, P., & Enriquez, A., "Preparing STEM Students for Success in Physics Through an Intensive Summer Program," 2013 American Society of Engineering Education Conference and Exposition, Atlanta, GA, June 23-26, 2013.
- Enriquez, A., et. al., "Creating Accelerated Educational Pathways for Underprepared STEM Students through an Intensive Math Placement Test Review Program," 2013 American Society of Engineering Education Pacific Southwest Section Conference, Riverside, CA, April 18-28, 2013.
- Chen, C. DeAndreis, M., Moala, P. Robles, A., Valdovinos, J., Zeng, Q., Enriquez, A., Pong, W., & Shahnasser, H., "Integrating Earthquake Engineering into Community College Student Educational Experience through a Summer Internship," 2013 American Society of Engineering Education Pacific Southwest Section Conference, Riverside, CA, April 18-28, 2013.
- Paulino, J., Garcia, J., Lohse, J., Prado-Guerrero, Balani, A, Lakshmipuram, S., H, Mahmoodi, Chen C., Enriquez, A., Jiang, H., Pong, W, & Shahnasser, H., " Engaging Community College Students in Research using Summer Internship on Analysis of Performance Degradation of Integrated Circuits Due to Transistor Aging Effects in Nano-Scale," 2013 American Society of Engineering Education Pacific Southwest Section Conference, Riverside, CA, April 18-28, 2013.

- Jiang, H., Carrillo, J., Salguero, A., Talle, E., Raygoza, E., Leon, X., Lariviere, B., Enriquez, A., Pong, W., & Shahnasser, H. "Engaging Underrepresented Community College Students in Engineering Research," 2013 American Society of Engineering Education Pacific Southwest Section Conference, Riverside, CA, April 18-28, 2013.

Invited Presentations:

- Expanding the STEM Pipeline: Developing Programs for Students and Faculty, 2014 Professional Development Workshop at Santa Monica College, February 7, 2014.
- Expanding the STEM Pipeline: Developing Programs for Students and Faculty, 2013 STEMTech Conference, October 27-30, 2013, Atlanta, GA.
- Strategies for Expanding and Strengthening the Community College STEM Pipeline, 2013 Alliance of Hispanic-Serving Institution Educators Conference, Jersey City, NJ, March 10-13, 2013.

Future Professional Delopment Needs:

Training on Surveying Equipment use and SolidWorks, and perhaps AutoCAD for Civil (Land Development Desktop). Training for the surveying equipment is needed to support the new course, Engr 111. Currently, the course is being taught by an adjunct faculty. If the course becomes a permanent part of the department offering, the engineering full-time faculty needs to be trained on using the equipment.

SolidWorks and AutoCAD continue to be upgraded every year, and faculty needs professional development in keeping up with the changes. Adjunct faculty in engineering will also need to be trained in online instruction to continue to support online courses.

C. Classroom & Instructional Equipment requests

Guidelines:
- List classroom & instructional equipment requested, including item description, suggested vendor, number of items, and total cost.
- Explain how it will serve Department/Program/Division/College needs.
- List the requests (item description, suggested vendor, number of items, and total cost).
- List special facilities and equipment that you currently use and require.

Item #	Item Description	Qty	Unit Cost	Tax & Shipping	Total Cost
1	**AutoCAD Subscription Renewal**	32	$140	350	$4,830
2	**SolidWorks Subscription Renewal 30 User Network**	1	$1500	130	$1630

3	**NetSupport School Renewal**	**100**	**$8**	**0**	**$800**
4	**New i7 Workstations – 23' monitors - 2nd Smart CS classroom needed, due to the increased enrollment.**	**32**	**950**	**0**	**$24,000**
5	**Desks for 2nd Smart class room**	**16**	**300**	**0**	**$4,800**

D. Office of Planning, Research & Student Success requests

Guidelines:
- List data requests for the Office of Planning, Research & Student Success.
- Explain how the requests will serve the Department/Program/Division/College needs.

A cohort analysis of all incoming students. Success and retention rates/two-year retention rate/transfer rate correlated with initial placement, ethnicity, gender, declared major, high school, etc. This analysis would be very useful identifying new initiatives to improve student outcomes.

E. Facilities requests

Guidelines:
- List facilities requests.
- Explain how the requests will serve the Department/Program/Division/College needs.

- Change floor-mounted power plugs to ceiling-mounted ones. The current setup is prone to plugs breaking, and is also a hazard (students tripping on cords and outlets).
- The College needs a better Testing facility/proctoring services for online students. With the number of online students continually increasing, the Testing Service provided by the Learning Center is not sufficient for the following reasons:
    - Space is limited and is not able to accommodate more 20-25 students. This semester, the two online courses in engineering have more than 20 students each (close to 40 for Circuits).
    - Set up is not ideal.
        - The proctor is also working in the front desk, and hence cannot closely monitor the students taking tests. As a result it is very easy for students to cheat.
        - Time limits on tests are impossible to enforce since students do not take the test at the same time.
        - Noise level is too high and students complain about not being able to concentrate
    - To avoid the problems mentioned above the engineering faculty has been proctoring tests for online students. Often, more than one session has to be held because of scheduling conflicts. Sometimes, it is also difficult to find a room available for online students taking the test.

- Find location in Building 22 room for a 2nd Smart Classroom for New AS/T degree and Certificates in "Computer Science" and all its Courses (with computer purchase)
    - Install 16 double desks for computers, install 32 new workstations (i7, 17 inch monitors).
- Room 118 in Building 22
    - Paint walls, and clean rug !

Program Report of Direct Assessments

San Mateo CCCD

CAN Dept - Engineering

Department Assessment Coordinator: Amelito Enriquez

SLOs	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CAN Dept - Engineering - solve engineering/computer science problems - Apply knowledge of math, science, and engineering or computer science to identify, formulate, and solve engineering/computer science problems. **SLO Status:** Active	**Assessment Method:** Assessed cumulatively through scores in tests, assignments and projects in courses. ct in CIS 250 **Assessment Method Category:** Other **Success Criterion:** 80% of students get a C or better on each Engineering/CIS class	08/09/2013 - 100% of transferring students got a C or better. Average SLO1 score for the selected engineering courses was 3.93, higher than the 3.5 minimum average required. **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** SLO1.xls	
		03/08/2013 - Student average scores in the selected assessments in Engr and Engr 260 was 4.6125. 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: one minor error (sign of unit vector, cross product) 4: Algebra error 5: Full Credit **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** SLO1.xls	
CAN Dept - Engineering - skills and tools - Use techniques, skills, and modern engineering and computer tools necessary for engineering or computer science practice **SLO Status:** Active	**Assessment Method:** Engr 210 Final Project; CIS 250 projects **Assessment Method Category:** Project **Success Criterion:**	03/08/2013 - 17 out of 18 students performed satisfactorily based on Engineering Lab courses completed. One student could not be assess because he never took any of the Engineering Lab Courses. **Result Type:**	

SLOs	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
	70% of students complete the project successfully.	Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** SLO2.xls	
CAN Dept - Engineering - perform tests. interpret data - Design and perform tests or experiments, analyze and interpret data, and prepare a report summarizing the results of the tests or experiments. **SLO Status:** Active	**Assessment Method:** Labs/lab reports/programming assignments CIS 250/251 Engr 261, 270 **Assessment Method Category:** Other **Success Criterion:** 80% successfully demonstrate skill.	03/08/2013 - 17 out of 18 students performed satisfactorily based on Engineering Lab courses completed. One student could not be assess because he never took any of the Engineering Lab Courses. **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** SLO3.xls	
CAN Dept - Engineering - system design - Develop a design or system given a set of requirements and specifications. **SLO Status:** Active	**Assessment Method:** Projects (individual or group) CIS 118/119, 250/251 Engr 100 (Competition), Engr 210 **Assessment Method Category:** Project **Success Criterion:** 80% successful in completing the project (CIS). 100% of the projects are functional.	08/09/2013 - 100% of engineering students who transferred successfully completed the Engr 210 final project. **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** SLO4.xls	
CAN Dept - Engineering - Communicate effectively - Communicate effectively and work well in situations that require teamwork. **SLO Status:** Active			
CAN Dept - Engineering - plan of study - Formulate a plan of study to obtain a Bachelor?s degree in engineering or computer science **SLO Status:** Active			

Dept Course Assessment Report - Four Column

San Mateo CCCD

CAN Dept - Engineering

Department Assessment Coordinator: Amelito Enriquez

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CAN Dept - Engineering - CAN ENGR 100 - Introduction to Engineering - Role - Evaluate the role of engineers in various societies around the world and throughout history. (Created By CAN Dept - Engineering) **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** Quiz, Test **Assessment Method Category:** Exam		
CAN Dept - Engineering - CAN ENGR 100 - Introduction to Engineering - Disciplines - Recommend the types of projects and responsibilities that are the most appropriate for various engineering disciplines. (Created By CAN Dept - Engineering) **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** Quiz, Test, Written report on typical job functions of engineers. **Assessment Method Category:** Essay	06/06/2012 - Class average of 86% on class presentation Class average of 89% on written report **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 05/29/2011 - Assessment via written report: 100% pass rate with average score of 87% Assessment via test question: Average score 1.65 (2-completely correct, 1-partially correct, 0-did not attempt/not correct), all students earned at least a 1 score. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011	
CAN Dept - Engineering - CAN ENGR 100 - Introduction to Engineering - Calculations - Formulate and perform elementary engineering calculations to aid the selection of the best design for a simple device. (Created By CAN Dept - Engineering)	**Assessment Method:** Written Report and Class Presentation: Formulate and perform elementary engineering calculations to aid the selection of the best design for a simple device." **Assessment Method Category:**	06/06/2012 - Class average of 84% on class presentation Class average of 91% on written report **Result Type:**	

Criterion met

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
Start Date: 01/15/2010 **Course Outcome Status:** Active	Other	**Reporting Cycle:** 2011 - 2012 06/01/2011 - 100% student pass rate with an overall class average of 87% **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011	
	Assessment Method: Test & labs - Use Excel and MATLAB to study the Hook's law for springs and simple circuit analysis. **Assessment Method Category:** Portfolio		
	Assessment Method: Test & labs - Use Excel and MATLAB to study the Hook's law for springs and simple circuit analysis. **Assessment Method Category:** Exam		
CAN Dept - Engineering - CAN ENGR 100 - Introduction to Engineering - Drawings - Read and write elementary engineering drawings, instructions, and reports. (Created By CAN Dept - Engineering) **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** Project Presentation and lab report- Create an engineering drawing showing the top, front, and right views of your model. **Assessment Method Category:** Presentation/Performance		
	Assessment Method: Project Presentation and lab report- Create an engineering drawing showing the top, front, and right views of your model. **Assessment Method Category:** Portfolio		
CAN Dept - Engineering - CAN ENGR 100 - Introduction to Engineering - Data - Perform experiments analyze and interpret data, and prepare a report summarizing the results of the experiments. (Created By CAN Dept - Engineering) **Start Date:** 01/15/2010	**Assessment Method:** Lab Reports - Prepare a summary of the results of an experiment. **Assessment Method Category:** Portfolio		

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
Course Outcome Status: Active			
CAN Dept - Engineering - CAN ENGR 100 - Introduction to Engineering - License - Illustrate the processes required to become an engineer and maintain a license. (Created By CAN Dept - Engineering) **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** Quiz, Test **Assessment Method Category:** Exam		
CAN Dept - Engineering - CAN ENGR 100 - Introduction to Engineering - Ethics - Explain and analyze ethical issues in engineering (Created By CAN Dept - Engineering) **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** Case studies **Assessment Method Category:** Portfolio		
CAN Dept - Engineering - CAN ENGR 210 - Engineering Graphics - Drawings - Read engineering drawings. (Created By CAN Dept - Engineering) **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** Lab on Working Drawings **Assessment Method Category:** Other **Success Criterion:** At least 80% of students get 24 out of 30 points on Lab.	03/04/2014 - 78.9% of the students satisfied the criterion. **Result Type:** Criterion not met **Reporting Cycle:** 2014 - 2015 12/25/2011 - 1.22 class average **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr210-Assessment Data-2011	03/04/2014 - Assign a single 30-point grade for the lab (rather than having three separate grades for each part). Some students did not even attempt to do the last part of the lab because they know that the grade on the last part will/may be dropped as the lowest lab.
CAN Dept - Engineering - CAN ENGR 210 - Engineering Graphics - ProjectionTypes - Distinguish between various types of projections used in engineering	**Assessment Method:** Multiview with Acad(Test 1 Prob 2) 0 - unsatisfactory 1 - satisfactory	12/31/2012 - 89% of the students got a 1 or higher. Class average is 1.41. **Result Type:** Criterion met	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
drawings. (Created By CAN Dept - Engineering) **Assessment Cycles:** 2010-2011 **Start Date:** 01/15/2010 **Course Outcome Status:** Active	2 - outstanding **Assessment Method Category:** Exam **Success Criterion:** At least 80% of students receive a 1. Average of the class is at least 1.0	**Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr210-SLOAssessmentData.xlsx 01/14/2011 - 100% of students received a 1. Class average is 1.185. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr210 Assessment Data	
CAN Dept - Engineering - CAN ENGR 210 - Engineering Graphics - Freehand - Make freehand drawings, and demonstrate the use of drawing instruments. (Created By CAN Dept - Engineering) **Assessment Cycles:** 2010-2011 **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** Isometric Sketching 0 - unsatisfactory 1 - satisfactory 2 - outstanding **Assessment Method Category:** Exam **Success Criterion:** At least 80% of students receive a 1. Average of the class is at least 1.0	03/04/2014 - Class average is 1.21. **Result Type:** Criterion met **Reporting Cycle:** 2013 - 2014 12/31/2012 - 89% of students received a 1 or 2. Class average is 1.33. **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr210-SLOAssessmentData.xlsx 12/25/2011 - Class average 1.33 **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr210-Assessment Data-2011 01/14/2011 - 96.4% of students received at least a 1. Class average is 1.296 **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr210 Assessment Data	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CAN Dept - Engineering - CAN ENGR 210 - Engineering Graphics - CAD - Demonstrate the use of CAD programs, including solid modeling (Created By CAN Dept - Engineering) **Assessment Cycles:** 2010-2011 **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** Create a solid model using AutoCAD. Create a layout showing standard orthographics views using SOLVIEW/SOLDRAW. **Assessment Method Category:** Exam **Success Criterion:** 0 - unsatisfactory 1 - satisfactory 2 ? outstanding At least 80% of students receive a 1. Average of the class is at least 1.0	12/31/2012 - 96% of students received at least a 1. Class average is 1.30. **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr210-SLOAssessmentData.xlsx 01/14/2011 - 92.9% of students received a satisfactory rating. Class average is 1.222 **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr210 Assessment Data	
CAN Dept - Engineering - CAN ENGR 210 - Engineering Graphics - Design - Apply the engineering design process to develop original solutions to engineering problems. (Created By CAN Dept - Engineering) **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** Final Design Project **Assessment Method Category:** Capstone Assignment/Project **Success Criterion:** 60% of project prototypes are functional.	03/04/2014 - 84.2% of projects are functional. **Result Type:** Criterion met **Reporting Cycle:** 2013 - 2014 12/31/2012 - 100% of the final projects are functional. **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr210-SLOAssessmentData.xlsx 12/25/2011 - 1.12 Average. All prototypes worked. **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr210-Assessment Data-2011 01/14/2011 - 87.5% of project prototypes are functional. Quality of the projects are higher than previous year despite a more difficult project (Table Jumper).	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		Result Type: Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr210 Assessment Results	
		12/31/2009 - 100% of projects were functional. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 210 - Engineering Graphics - Tolerances - Specify dimensions and tolerances in engineering graphics. (Created By CAN Dept - Engineering) **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** Problem #3, Test 3: Starting with the AutoCAD drawing file Test3_3_2007.dwg, add the geometric dimensioning information given below: a. On the right-side view, indicate depth dimension of the object using lower and upper limits of 0.995 and 1.005, respectively. b. Make the right-hand face in the right-side view flat within 0.005. Identify this surface as datum feature A. c. Make the lower surface in the front view perpendicular within 0.005 relative to primary datum feature A. Identify this surface as datum feature B. d. Make the right-hand face of the front view perpendicular within 0.005 relative to the primary datum feature A, and secondary datum feature B. Identify this surface as datum feature C. e. Add basic dimensions to locate the centerlines of the holes in the front view. f. Dimension the two holes using lower and upper limits of 1.000 and 1.005, respectively. Position these holes to be within 0.004 cylindrical tolerance zone at maximum material condition relative to primary datum feature A, secondary datum feature B, and tertiary datum feature C at maximum material condition. g. Dimension the width of the slot using lower and upper limits of 2.000 and 1.005, respectively. Position this slot to within a .006		

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
	tolerance at maximum material condition relative to primary datum feature B, and secondary datum feature C. h. On the front view, add a profile of a surface tolerance of 0.010 relative to primary datum feature A, secondary datum feature B, and tertiary datum feature C applied to the left plane, the fillet, and the top plane between the bottom left corner and the top right corner points. i. Add remaining necessary dimensions as basic dimensions. **Assessment Method Category:** Exam **Success Criterion:** At least 80% of students receive 20 out of 30 points.		
CAN Dept - Engineering - CAN ENGR 210 - Engineering Graphics - Symbols - Adhere to the standard conventions for terminology, symbols, and styles used in engineering graphics. (Created By CAN Dept - Engineering) **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** Final Project Written Report **Assessment Method Category:** Other **Success Criterion:** at least 60% of project written report receives a grade of at least 15 out of 20.	03/04/2014 - 100% of written reports received a grade of at least 75% **Result Type:** Criterion met **Reporting Cycle:** 2013 - 2014 12/25/2011 - 17.53 Project Written Report Average. **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr210-Assessment Data-2011 01/14/2011 - 87.5% of the final project reports received a grade of at least 75%. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 12/31/2009 - 100% of final project reports received a great of 75% or higher. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CAN Dept - Engineering - CAN ENGR 215 - Computational Methods for Engr - MATLAB - Use MATLAB to analyze and solve problems in engineering and sciences. (Created By CAN Dept - Engineering) **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** The following data is the measured temperature T of water flowing from a hot water faucet after it is turned on a time t = 0. t (sec) 0 1 2 3 4 5 6 7 8 9 10 T (°F) 72.5 78.1 86.4 92.3 110.6 111.5 109.3 110.2 110.5 109.9 110.2 a) Plot the data first connecting them with straight lines, and then with a cubic spline. b) Estimate the temperature values at the following times using linear interpolation and then cubic-spline interpolation: t= 0.6, 2.5, 4.7, 8.9. c) Use both the linear and cubic-spline interpolations to estimate the time it will take for the temperature to equal the following values: T = 75, 85, 90, 105. **Assessment Method Category:** Exam	05/18/2011 - 9 out of 11 students got the problem completely correct, and the remaining 2 students fit the data with linear and cubic-spline interpolation but their estimates of the to reach the specified temperatures was not accurate. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 05/24/2010 - 6 out of 7 students met this objective. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 **Related Documents:** Engr215-Results	
	Assessment Method: Write a Monte Carlo simulation to estimate the probability that if a 10 inch stick is broken at random in two places, the 3 pieces can form a triangle. Assume that the two locations where the stick is broken are equally likely anywhere on the stick. Use the fact that in a triangle, the sum of the lengths of any two sides is greater than the length of the third side. Use 10000 trials in your simulation. 1. 0 = Little understanding of problem concept and/or Matlab language 2. 1 = Some understanding of problem concept and/or Matlab language 3. 2 = Minor algebraic/logic/Matlab language errors 4. 3 = Correct understanding of mathematical	06/05/2013 - Call average is 2.7 **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 06/06/2012 - Class Average = 2.4 **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr_215_SLOs_Lance_Lund.docx	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
	methods to solve problem and correct implementation of Matlab language. **Assessment Method Category:** Exam **Success Criterion:** Class average of 2.0		
CAN Dept - Engineering - CAN ENGR 215 - Computational Methods for Engr - Design - Apply a top-down design methodology to develop computer algorithms. (Created By CAN Dept - Engineering) **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** Students develop a computer algorithm using a top-down design **Assessment Method Category:** Other		
CAN Dept - Engineering - CAN ENGR 215 - Computational Methods for Engr - Create - Create, test and debug sequential MATLAB programs, as well as programs that use object oriented techniques. (Created By CAN Dept - Engineering) **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** Evaluation of student MATLAB programs **Assessment Method Category:** Other		
CAN Dept - Engineering - CAN ENGR 215 - Computational Methods for Engr - Solving - Apply numeric techniques to solve engineering and science problems, including numerical differentiation and integration, solving differential equations, finding the solutions of equations and systems of equations, and curve fitting. (Created By CAN Dept - Engineering) **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** Evaluation of student's ability to apply numeric techniques on homework and exams. **Assessment Method Category:** Exam		
	Assessment Method: Solve the following 2nd order differential equation symbolically and numerically, and plot both results together over the time interval [0,20] sec. Provide appropriate labels on both axes, a title, and a legend that denotes each solution. Check your symbolic answer by using the Matlab DIFF function to compute the appropriate derivatives and substituting them into the differential equation. (y) ̈+5(y+6) ̇y = sin(t), y(0) = 1,	06/05/2013 - Class average is 2.6. **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 06/06/2012 - Class Average: 2.5 **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
	y ̇(0)=-1 1. 0 = Little understanding of problem concept and/or Matlab language 2. 1 = Some understanding of problem concept and/or Matlab language 3. 2 = Minor algebraic/logic/Matlab language errors 4. 3 = Correct understanding of mathematical methods to solve problem and correct implementation of Matlab language. **Assessment Method Category:** Other **Success Criterion:** Class average of 2.0	**Related Documents:** Engr_215_SLOs_Lance_Lund.docx	
CAN Dept - Engineering - CAN ENGR 215 - Computational Methods for Engr - 2/3D - Effectively use advanced functionality of MATLAB such as 2D and 3D graphics, and other tools to analyze, visualize and solve problems. (Created By CAN Dept - Engineering) **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** Evaluation of completed project that utilizes 2D and 3D graphics in MATLAB **Assessment Method Category:** Project		
CAN Dept - Engineering - CAN ENGR 215 - Computational Methods for Engr - Data Structures - Demonstrate understanding and use of standard data structures. (Created By CAN Dept - Engineering) **Start Date:** 01/15/2010 **Course Outcome Status:** Active	**Assessment Method:** Evaluation of student's use of data structures in various programs and projects completed during the course. **Assessment Method Category:** Other	06/05/2013 - Class average is 2.7. **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013	
CAN Dept - Engineering - CAN ENGR 230 - Engineering Statics - Reduce force - Reduce systems of forces to one force or one force and one couple. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010	**Assessment Method:** Given that the resultant is horizontal (or vertical), find unknown forces and moments in the system. 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: one minor error (sign of unit vector, cross	06/04/2013 - Class average is 3.61 **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr230-AssmtData-SLO1.xls	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
Course Outcome Status: Active	product) 4: Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** Class average of at least 3.5	06/09/2012 - Class Average is 3.81 **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr230-AssmtData-SLO1.xls 05/29/2011 - 4.04 Class Average **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr230-AssmtData-SLO1 06/07/2010 - Class average is 3.96 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 **Related Documents:** Engr230-AssmtData-SLO1	
CAN Dept - Engineering - CAN ENGR 230 - Engineering Statics - Rigid - Solve for unknown forces for rigid bodies in two-dimensional and three-dimensional equilibrium. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Find reactions at supports of a rigid body in 3-D equilibrium. 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: One minor error (two or more algebra errors) 4: One Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** Average of 3.5 for class.	06/04/2013 - Class average is 4.23 **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr230-AssmtData-SLO2.xls 06/10/2012 - Class average is 3.86 **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr230-AssmtData-SLO2.xls 05/29/2011 - Class average is 4.08 **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		Related Documents: Engr230-AssmtData-SLO2 06/01/2010 - 4.04. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 06/01/2010 - 4.04 class average **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 06/01/2009 - 4.20 class average **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 06/01/2008 - 4.23 class average **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 06/01/2007 - 4.24 class average **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 230 - Engineering Statics - trusses - Analyze trusses, frames, and machines for external reaction forces and forces between the members. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Given a Truss or a Frame, find the forces in specified members. 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: One minor error (two or more algebra errors) 4: One Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** Class average of 3.5	06/04/2013 - Class average is 3.58 **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr230-AssmtData-SLO3.xls 06/10/2012 - Class average is 3.64. **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:**	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		Engr230-AssmtData-SLO3.xls 05/29/2011 - Class average is 3.96. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr230-AssmtData-SLO3	
		06/01/2010 - 3.44 **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010 **Related Documents:** Engr230-AssmtData-SLO3.xls	06/01/2010 - Need to give more quizzes on the chapter on Structures.
		06/01/2009 - 3.75 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
		06/01/2008 - 3.88 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
		06/01/2007 - 3.69 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 230 - Engineering Statics - centroids - Calculate centroids and moments of inertia for composite bodies. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Given a composite area, compute the coordinates of the centroid and moments of inertial about the given axes. 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: One minor error (two or more algebra errors) 4: One Algebra error 5: Full Credit	06/04/2013 - Class average is 4.05 **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr230-AssmtData-SLO4.xls	
		06/10/2012 - Class average is 4.05 **Result Type:** Criterion met	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
	Assessment Method Category: Exam **Success Criterion:** 3.5 average for the class.	**Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr230-AssmtData-SLO4.xls	
		05/29/2011 - Class Average is 3.42. Problem given was moment of inertia. **Result Type:** Criterion not met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr230-AssmtData-SLO4	05/29/2011 - Change HW problems on Chapter 9. Change sample Test 4 to show parallel axis theorem for a composite.
		06/01/2010 - 3.58 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 **Related Documents:** Engr230-AssmtData-SLO4.xls	
CAN Dept - Engineering - CAN ENGR 230 - Engineering Statics - Internal - Solve for internal forces in members and construct shear and bending moment diagrams for beams. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Given a beam acted on by a distributed load, concentrated forces, and a couple, draw the shear and bending moment diagrams. 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: One minor error (two or more algebra errors) 4: One Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** 3.5 average for the class.	06/04/2013 - Class average is 3.68. **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr230-AssmtData-SLO5.xls	
		06/10/2012 - Class average is 3.53 **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr230-AssmtData-SLO5.xls	
		05/29/2011 - Class average is 3.67 **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr230-AssmtData-SLO5	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		06/01/2010 - 3.5 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 **Related Documents:** Engr230-AssmtData-SLO5.xls	
		06/01/2009 - 3.4 **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	06/01/2010 - Emphasize graphical method.
		06/01/2008 - 4.08 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
		06/01/2007 - 3.76 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 230 - Engineering Statics - Friction - Solve problems that include friction. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Find an unknown force needed to keep system in equilibrium. (Wedge, or belt friction present.) 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: One minor error (two or more algebra errors) 4: One Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** 3.5 average for the class.	06/04/2013 - Class average is 3.86. **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr230-AssmtData-SLO6.xls	
		06/10/2012 - 3.67 class average **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr230-AssmtData-SLO6.xls	
		05/29/2011 - Class average is 4.17. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		Related Documents: Engr230-AssmtData-SLO6	
		06/01/2010 - 3.71 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
		Related Documents: Engr230-AssmtData-SLO6.xls	
		06/01/2009 - 3.6 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
		06/01/2008 - 4.15 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
		06/01/2007 - 3.71 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 230 - Engineering Statics - stability - Analyze the stability of rigid bodies in equilibrium. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Find positions of equilibrium, and analyze the stability of each equilibrium positions. 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: One minor error (two or more algebra errors) 4: One Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** 3.5 class average	06/01/2010 - 2.90 **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	
		06/01/2009 - 3.10 **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010 **Related Documents:** Engr230-AssmtData-SLO7.xls	06/01/2010 - Need to cover Virtual Work as part of Test 4
		06/01/2008 - 3.92 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CAN Dept - Engineering - CAN ENGR 240 - Engineering Dynamics - particle kinematics - Derive and apply the relationships between position, velocity, and acceleration of a particle in rectilinear and curvilinear motion. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Problem 1: Uniformly accelerated rectilinear motion, 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: one minor error (sign of unit vector, cross product) 4: Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** 3.5 class average **Related Documents:** Engr240 - Assessments.doc	03/04/2014 - Class average is 3.94. **Result Type:** Criterion met **Reporting Cycle:** 2013 - 2014 12/21/2012 - 3.96 Class average. **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr240-SLOAssessmentData.xlsx 12/25/2011 - 3.56 class average **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr240-Assessment Data-2011 01/14/2011 - 3,64 **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr240-SLOAssessmentData 12/31/2009 - 4.61 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 12/31/2009 - 4.27 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 **Related Documents:** Engr240-SLOAssessmentData.xlsx	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CAN Dept - Engineering - CAN ENGR 240 - Engineering Dynamics - plane motion - Derive relations defining the velocity and acceleration of any particle on a rigid body for translation, rotation and general plane motion. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Problem2: General Plane Motion - velocities and Acceleration **Assessment Method Category:** Exam **Success Criterion:** 3.5 class average **Related Documents:** Engr240 - Assessments.doc	03/04/2014 - Class average is 4.02 **Result Type:** Criterion met **Reporting Cycle:** 2013 - 2014	
		12/21/2012 - 3.96 class average. **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr240-SLOAssessmentData.xlsx	
		12/25/2011 - 4.19 class average. **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr240-Assessment Data-2011	
		01/14/2011 - 4.14 class average **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr240-SLOAssessmentData	
		12/31/2009 - 3.45 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	06/01/2010 - Give 2 quizzes on Chapter 15 - one on velocities, and one on accelerations. **Action Plan Category:** Conduct Further Assessment
		12/31/2008 - 4.72 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CAN Dept - Engineering - CAN ENGR 240 - Engineering Dynamics - Newton - Correctly apply Newton's second law to analyze the motion of a particle in rectilinear or curvilinear translation acted upon by forces, or a rigid body in plane motion acted upon by forces and moments. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Problem 5: D'Alembert's Principle 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: one minor error (sign of unit vector, cross product) 4: Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** 3.5 class average **Related Documents:** Engr240 - Assessments.doc	03/04/2014 - Class average is 3.75. **Result Type:** Criterion met **Reporting Cycle:** 2013 - 2014	
		12/21/2012 - 3.75 class average **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr240-SLOAssessmentData.xlsx	
		12/25/2011 - 3.56 class average **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012	
		01/14/2011 - 3.29 class average. Improved from last year's 2.73 but still needs improvement. **Result Type:** Criterion not met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr240-SLOAssessmentData	01/14/2011 - Focus on one-FBD problems with zero omega. Give a quiz on Chapter 16 GPM.
		12/31/2009 - 2.73 **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	06/01/2010 - Give a quiz on Chap 16, GPM.
		12/31/2008 - 4.11 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 240 - Engineering Dynamics - work-energy - Apply the method of work and energy to problems involving a single particle, a system of particles, or a rigid body in plane	**Assessment Method:** Problem 3: Work-energy with spring, gravity and friction. 0: No credit 1: Less than 50% of solution is correct	03/04/2014 - Class average is 4.17. **Result Type:** Criterion met **Reporting Cycle:**	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
motion. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	2: One major error (two or more minor errors) 3: one minor error (sign of unit vector, cross product) 4: Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** 3.5 class average	2013 - 2014 12/21/2012 - 4.11 Class Average **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr240-SLOAssessmentData.xlsx 12/25/2011 - 4.0 class average **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr240-Assessment Data-2011 01/14/2011 - Class average 3.5. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr240-SLOAssessmentData 12/31/2009 - 3.82 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 12/31/2008 - 4.11 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 240 - Engineering Dynamics - Analysis - Select the method of analysis that is best suited for the solution of a given problem. (Newton's Law, Work and Energy, Impulse and Momentum, or a combination of these methods.) (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010	**Assessment Method:** Problem 6 - Rigid body kinetics (w-e) **Success Criterion:** 3.5 class average **Related Documents:** Engr240 - Assessments.doc	03/04/2014 - Class average is 4.17 **Result Type:** Criterion met **Reporting Cycle:** 2013 - 2014 12/21/2012 - 3.46 Average. Low because is was the last problem on the test. **Result Type:**	12/21/2012 - Low scores probably because this was the last problem on the test. Try moving to second to that last or

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
Course Outcome Status: Active		Criterion not met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr240-SLOAssessmentData.xlsx	4th problem.
		12/25/2011 - 3.56 class average **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012	
		01/14/2011 - 3.64 class average. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr240-SLOAssessmentData	
		12/31/2009 - 3.36 **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	06/01/2010 - Quiz on Ch 17. w-e of rigid body.
		12/31/2008 - 4.00 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 240 - Engineering Dynamics - Coriolis - Describe and analyze the plane motion of a particle relative to a rotating frame. Determine the Coriolis acceleration in plane motion. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Test #3: Problem #4. Given two rotating bars connected by a collar, find the angular velocity, relative velocity with respect to rotating frame, angular acceleration, and relative acceleration with respect to the rotating frame. 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: one minor error (sign of unit vector, cross product) 4: Algebra error 5: Full Credit	03/04/2014 - Class average is 3.64. **Result Type:** Criterion met **Reporting Cycle:** 2013 - 2014	
		12/21/2012 - 3.54 class average **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr240-SLOAssessmentData.xlsx	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
	Assessment Method Category: Exam **Success Criterion:** Class average of at least 3.5	12/25/2011 - 3.94 class average **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr240-Assessment Data-2011	
CAN Dept - Engineering - CAN ENGR 240 - Engineering Dynamics - Impact - Apply the principle of impulse and momentum to problems of direct and oblique central impact, as well as eccentric impact. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Problem 4: Direct Central Impact 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: one minor error (sign of unit vector, cross product) 4: Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** 3.5 class average	03/04/2014 - Class average is 4.33. **Result Type:** Criterion met **Reporting Cycle:** 2013 - 2014 12/21/2012 - 4.18 class average. **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr240-SLOAssessmentData.xlsx 12/25/2011 - 4.34 class average **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr240-Assessment Data-2011 01/14/2011 - 3.5 **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr240-SLOAssessmentData 12/31/2009 - 4.09 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 12/31/2008 - 3.78 **Result Type:** Criterion met	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		Reporting Cycle: 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 260 - Circuits And Devices - responses - Analyze electric circuits for DC, transient, and AC voltage and current responses. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Problems 1 (Source Transformation), 2 (Mesh) & 3 (Nodal) Source Transformation: 0: No credit 1: two incorrect transformations 2: Transformed 2-ohm resistor 3: One incorrect transformation 4: Algebra error 5: Full Credit Mesh: 0: No credit 1: two incorrect meshes 2: constrained mesh 3: one incorrect mesh 4: Algebra Error 5: Full Credit Nodal: 0: No credit 1: two incorrect nodal equations 2: constrained node 3: one incorrect node 4: Algebra Error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** 3.5 class average	06/04/2013 - Class average is 4.10. **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr260-AssmtData-SLO1.xls 06/10/2012 - 4.27 class average **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr260-AssmtData-SLO1.xls 05/28/2011 - 4.47 Class average. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr260-Assesssment Data SLO1 06/01/2010 - 3.98 class average **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 **Related Documents:** Engr260-AssmtData-SLO1.xls 06/01/2009 - 4.41 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 06/01/2008 - 4.15 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CAN Dept - Engineering - CAN ENGR 260 - Circuits And Devices - techniques - Evaluate different circuits analysis techniques and choose an appropriate technique for a particular circuit. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Problem 6 on Assessment (Thevenin, Maximum Power, AC) Maximum Power: 0: No credit 1: only one correct (Zth, Vth, ZL, Pmax) 2: two correct 3: Three correct 4: Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** 3.5 class average	06/05/2013 - Class average is 3.95. **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr260-AssmtData-SLO2.xls 06/10/2012 - 4.00 class average **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr260-AssmtData-SLO2.xls 05/28/2011 - Class average is 3.91 **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr 260 SLO2 Results 06/01/2010 - 4.15 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 **Related Documents:** Engr260-AssmtData-SLO2.xls	
CAN Dept - Engineering - CAN ENGR 260 - Circuits And Devices - Solution - Synthesize a method of solution to the determine current or voltage in any circuit using a combination Kirchhoff?s Laws, loop and node analysis, the solution of differential equations, generalized impedance and admittance techniques, and phasor methods. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:**	**Assessment Method:** Problems 4 (1st-order) and 7 (2nd-order) 1st-order: 0: No credit 1: one correct (solution, s-s, initial and tau) 2: two correct 3: Three correct 4: Algebra error 5: Full Credit 2nd-order:	06/05/2013 - Class average is 3.43 (3.65 for first-order and 3.22 for second-order circuit). The second-order problem is the last problem on the final, and few students did not even attempt the problem. **Result Type:** Criterion not met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr260-AssmtData-SLO3.xls	06/05/2013 - For next year, move the 2nd-order problem to number 4 on the final exam Students did well on this problem in Test 2. It is possible that the low scores in the final are simply because it is the last problem on the test.

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
Active	0: No credit 1: one correct (s-s, char. eqn. transient form) 2: 2 correct 3: three correct 4: IC wrong 5: Full credit (or algebra) **Assessment Method Category:** Exam **Success Criterion:** 3.5 class average	06/10/2012 - 3.59 average **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr260-AssmtData-SLO3.xls	
		05/28/2011 - Class average is 3.66. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr 260 SLO3 Results	
		06/01/2010 - 3.63 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 **Related Documents:** Engr260-AssmtData-SLO3.xls	
		06/01/2009 - 3.48 **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	06/01/2010 - Assign more problems on Chapter 8 - 2nd-order transients.
		06/01/2008 - 3.45 **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	06/01/2010 - Assign more problems on 2nd-order circuits.
CAN Dept - Engineering - CAN ENGR 260 - Circuits And Devices - op amp - Apply a simple model for transistor and operational amplifiers to design and analyze simple circuits. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Exam 2. Problem #4. Given an operational amplifier circuit, find the output voltage (or current) assuming ideal op amp techniques. 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: one minor error (sign of unit vector, cross product) 4: Algebra error 5: Full Credit	06/05/2013 - Class average is 3.55. **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr260-AssmtData-SLO4.xls	
		03/25/2011 - Class average of 3.58 **Result Type:** Criterion met	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		Reporting Cycle: 2010 - 2011 **Related Documents:** Engr260-Assesssment Data SLO6	
	Assessment Method Category: Exam **Success Criterion:** Average score of 3.5.		
CAN Dept - Engineering - CAN ENGR 260 - Circuits And Devices - Steady state - Solve steady state AC circuit and network problems involving power transfer and resonance. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Problem 6 on Assessment (Complex, Apparent, Real, Reactive Power) Maximum Power: 0: No credit 1: only one correct (Zth, Vth, power factor, S) 2: two correct 3: Three correct 4: Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** 3.5 class average	06/05/2013 - Class average is 3.57 **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 **Related Documents:** Engr260-AssmtData-SLO6.xls	
		06/10/2012 - 3.91 class average **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr260-AssmtData-SLO6.xls	
		05/28/2011 - Class average is 4.22. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr260-Assesssment Data SLO6	
		06/01/2010 - 4.07 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 **Related Documents:** Engr260-AssmtData-SLO1.xls	
		06/01/2009 - 3.59 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
		06/01/2008 - 3.27 **Result Type:**	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		Criterion not met **Reporting Cycle:** 2009 - 2010	06/01/2010 - Emphasize Complex Power approach.
CAN Dept - Engineering - CAN ENGR 260 - Circuits And Devices - simulation - Use a circuit simulation program (MultiSIM, PSPICE) to analyze circuit behavior. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Simulations Using MultiSIM. Y or N for each student **Assessment Method Category:** Other **Success Criterion:** 90% of students are able to create MULTISIM simulation	05/28/2011 - All students taking lab class are proficient with MULTISIM. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011	
		06/01/2010 - 100% of students showed proficiency in using MultiSIM. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 261 - Circuits & Devices Lab. - Operate - Operate, safely and properly, multimeters, power supplies, signal generators and oscilloscopes. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Instructor observation during labs. 0: zero proficiency 1: some proficiency 2: moderate proficiency 3: expert in using equipment **Assessment Method Category:** Presentation/Performance **Success Criterion:** class average of 2 **Related Documents:** Engr261 Assessment.doc	08/20/2012 - 23 out of 24 (or95.8%) of students demonstrated proficiency in using Electronic test & measurement equipment (i.e. voltmeters, oscilloscopes, power supplies) **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** ENGR261_SP2012_SLO.xls	
		05/30/2011 - Class average is 2.59 **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr261-AssmtData-SLO1	
		06/02/2010 - 2.54 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 **Related Documents:**	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		Engr261-SLOAssessmentData.xlsx	
CAN Dept - Engineering - CAN ENGR 261 - Circuits & Devices Lab. - Build - Build, from schematic diagrams, circuits using resistive, capacitive and inductive elements as well as switches, potentiometers, transistors, operational amplifiers, lamps, decade boxes and power supplies (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Instructor observation during labs. 0: zero proficiency 1: some proficiency 2: moderate proficiency 3: able to build and troubleshoot any circuit **Assessment Method Category:** Presentation/Performance **Success Criterion:** class average of 2.0 **Related Documents:** Engr261 Assessment.doc	08/20/2012 - 24 out of 24 (or 100%) of students are able to read and understand a circuit diagram and build electronic circuits correctly using a circuit diagram. **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** ENGR261_SP2012_SLO.xls 05/30/2011 - Class average is 2.50. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr261-AssmtData-SLO2 06/02/2010 - 2.38 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 261 - Circuits & Devices Lab. - Calculate - Calculate dc and ac voltage, current, and power, and experimentally verify the results for a variety of electrical circuits (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Lab on op amp circuits **Assessment Method Category:** Capstone Assignment/Project **Success Criterion:** 8.50 class average	05/30/2011 - Class average is 8.64 **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr261-AssmtData-SLO3 06/02/2010 - 8.97 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 261 - Circuits & Devices Lab. - Design - Design and construct circuits to	**Assessment Method:** Lab on nodal, mesh, superposition, Thevenin and Norton	05/30/2011 - Class average is 8.56. **Result Type:** Criterion met	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
experimentally verify circuit theorem?s including Ohm?s Law, Kirchhoff Rules, superposition, Thevenin, and Norton theorems. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method Category:** Other **Success Criterion:** 8.50 class average	**Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr261-AssmtData-SLO3 06/02/2010 - 9.24 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 261 - Circuits & Devices Lab. - Verify - Experimentally verify the transient behavior of first- and second-order RLC circuits. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Lab on 2nd-order transients **Assessment Method Category:** Other **Success Criterion:** 8.5 class average	05/30/2011 - Class average is 8.86. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr261-AssmtData-SLO5 06/02/2010 - 9.14 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 261 - Circuits & Devices Lab. - Reports - Write lab reports that evaluate, analyze and summarize results and measurements of circuit behavior, including a discussion of any discrepancies between theoretical and measured results. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Average of lab reports **Assessment Method Category:** Other **Success Criterion:** 8.50 class average	08/20/2012 - 20 out of 24 (or 83.3%) of students can write clear and concise lab reports communicating experimental procedure, data, results, and conclusions. **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** ENGR261_SP2012_SLO.xls 05/30/2011 - Class average is 9.71. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr261-AssmtData-SLO56 06/02/2010 - 9.14 **Result Type:**	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 261 - Circuits & Devices Lab. - Simulation - Use a circuit simulation program (PSPICE, MultiSIM) and other computer applications (MATLAB, MS Excel) to predict circuit behavior. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** MultiSIM: 0: zero proficiency 1: some proficiency 2: moderate proficiency 3: very proficient **Assessment Method Category:** Other **Success Criterion:** class average of 2.50	05/30/2011 - Class average is 2.59. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr261-AssmtData-SLO7	
		06/02/2010 - 3.0 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 270 - Materials Science - crystals - Identify the crystalline structure of models, and explain now the structure?s characteristics affect a material?s properties. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Problem 1. Crystal structure; APF 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: one minor error (sign of unit vector, cross product) 4: Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** 3.5 class average **Related Documents:** Engr270-Assessments.doc	01/04/2012 - 3.28 average. **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr270 - Assessment Data Fall2011	
		01/15/2011 - 3.57 class average **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr270-SLOAssessmentData	
		12/31/2009 - 4.11 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 **Related Documents:** Engr270-SLO1AssessmentData.xlsx	
		12/31/2008 - 4.00 **Result Type:**	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		Criterion met **Reporting Cycle:** 2009 - 2010 **Related Documents:** Engr270-SLOAssessmentData	
CAN Dept - Engineering - CAN ENGR 270 - Materials Science - Imperfections - Distinguish between the types of imperfections that can occur in crystalline structures and compare their effects on a material?s properties. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Problem 4: Slip systems; single crystal 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: one minor error (sign of unit vector, cross product) 4: Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** 3.5 class average **Related Documents:** Engr270-Assessments.doc	01/15/2011 - 3.93 class average. Improved from 2009 results (3.18 average). **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr270-SLOAssessmentData	
		12/31/2009 - 3.18 **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010 **Related Documents:** Engr270-SLOAssessmentData	06/01/2010 - Give at least one quiz on slip systems.
		12/31/2008 - 3.5 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 270 - Materials Science - s-s diffusion - Calculate rates of steady-state diffusion. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Steady State Diffusion Problem on Chapter 5. 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: one minor error (sign of unit vector, cross product) 4: Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** Class average of at least 3.5	01/04/2012 - 3.75 class average. **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr270 - Assessment Data Fall2011	
		01/14/2011 - Class average of 3.6 **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:**	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		Engr270-SLOAssessmentData	
CAN Dept - Engineering - CAN ENGR 270 - Materials Science - mechanical properties - Perform tension, compression, and hardness tests, and interpret the results. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Problem 3: Minimum diameter for given elongation and diameter reduction. 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: one minor error (sign of unit vector, cross product) 4: Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** 3.5 class average **Related Documents:** Engr270-Assessments.doc	01/15/2011 - 3.29 class average **Result Type:** Criterion not met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr270-SLOAssessmentData 12/31/2009 - 3.55 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 **Related Documents:** Engr270-SLOAssessmentData 12/31/2008 - 4.07 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	01/15/2011 - Give two separate quizzes on Chapter 6. One on satisfying multiple design criteria.
CAN Dept - Engineering - CAN ENGR 270 - Materials Science - strengthening mechanisms - Describe different strengthening mechanisms and thermal processing, and compare their effects. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Problem 7: TTT Diagram 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: one minor error (sign of unit vector, cross product) 4: Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** 3.5 class average **Related Documents:** Engr270-Assessments.doc	01/04/2012 - 2.63 class average. **Result Type:** Criterion not met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr270 - Assessment Data Fall2011 01/15/2011 - 3.63 class average **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr270-SLOAssessmentData 12/31/2009 - 3.90 **Result Type:** Criterion met	01/04/2012 - Spend more time on Chapters 9 & 10. Give at least one quiz for each chapter. **Action Plan Category:** Conduct Further Assessment

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
		Reporting Cycle: 2009 - 2010 12/31/2008 - 3.00 **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Engineering - CAN ENGR 270 - Materials Science - polymers - Relate typical properties of polymers and ceramics to their structures. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Test 4 Multiple Choice questions. Class average of 12 out of 20 points. **Assessment Method Category:** Exam		
	Assessment Method: Iron oxide (FeO) has the rock salt crystal structure. It has a density of 5.70 g/cm3, and the atomic weights are 55.85 g/mol for Iron, and 16.00 g/mol for Oxygen. a. Calculate the unit cell edge length. b. How does the result in part (a) compare with the edge length as determined from the ionic radii of 0.077 nm for Iron, and 0.140 nm for Oxygen? 0: No credit 1: Less than 50% of solution is correct 2: One major error (two or more minor errors) 3: one minor error (sign of unit vector, cross product) 4: Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** 3.5 class average.	01/04/2012 - 3.25 class average. **Result Type:** Criterion not met **Reporting Cycle:** 2011 - 2012 **Related Documents:** Engr270 - Assessment Data Fall2011 Engr270 - Assessment Data Fall2011	01/04/2012 - Give a quiz on cermic crystal structures before Test 4. **Action Plan Category:** Conduct Further Assessment
CAN Dept - Engineering - CAN ENGR 270 - Materials Science - semi-conductors - Describe the mechanisms for electrical conduction in semiconductors. (Created By CAN Dept - Engineering)	**Assessment Method:** Problem 8: Doping of Germanium with Antimony 0: No credit 1: Less than 50% of solution is correct	01/04/2012 - 3.94 class average. **Result Type:** Criterion met **Reporting Cycle:** 2011 - 2012	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
Start Date: 01/17/2010 **Course Outcome Status:** Active	2: One major error (two or more minor errors) 3: one minor error (sign of unit vector, cross product) 4: Algebra error 5: Full Credit **Assessment Method Category:** Exam **Success Criterion:** 3.5 class average **Related Documents:** Engr270-Assessments.doc	**Related Documents:** Engr270 - Assessment Data Fall2011 01/15/2011 - 4.04 class average **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** Engr270-SLOAssessmentData 12/31/2009 - 3.39 **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010 12/31/2008 - 3.50 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010 12/31/2008 - 3.39 **Result Type:** Criterion not met **Reporting Cycle:** 2009 - 2010	06/01/2010 - Spend more time on Ch 18.
CAN Dept - Engineering - CAN ENGR 410 - Computer-Aided Graphics - Read - Read engineering drawings (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Weekly lab assignments. Labs 1-9. **Assessment Method Category:** Other **Success Criterion:** Average class grade for Labs 1-9 is at least 8 out of 10.		
CAN Dept - Engineering - CAN ENGR 410 - Computer-Aided Graphics - Projections - Distinguish between various types of projections used in engineering drawings. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:**	**Assessment Method:** Multiview with Acad(Test 1 Prob 2) 0 - unsatisfactory 1 - satisfactory 2 - outstanding **Assessment Method Category:** Exam **Success Criterion:**		

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
Active	80% of class got 1. Class average is at least 1.0.		
CAN Dept - Engineering - CAN ENGR 410 - Computer-Aided Graphics - Draw - Make freehand drawings (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Isometric Sketching 0 - unsatisfactory 1 - satisfactory 2 - outstanding **Assessment Method Category:** Exam **Success Criterion:** 80% of class got 1. Class average is at least 1.0.		
CAN Dept - Engineering - CAN ENGR 410 - Computer-Aided Graphics - Instruments - Demonstrate the use of drawing instruments. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Lab #5 - Isometric Sketching **Assessment Method Category:** Other **Success Criterion:** Class average grade for Lab 5 is at least 8.		
CAN Dept - Engineering - CAN ENGR 410 - Computer-Aided Graphics - AutoCad - Demonstrate the use of AutoCAD to create engineering drawings. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Test 1, Problem 1: Orthographic Projections with AutoCAD **Assessment Method Category:** Exam **Success Criterion:** Class average grade of 8 out of 10.		
CAN Dept - Engineering - CAN ENGR 413 - Designing with CAD - Geometry - Apply descriptive geometry principles to solve engineering problems involving points, lines, surfaces and volumes. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Labs 10-13 on Descriptive Geometry **Assessment Method Category:** Other **Success Criterion:** Class average of at least 8.		
CAN Dept - Engineering - CAN ENGR 413 - Designing with CAD - AutoCad - Demonstrate the use of AutoCAD	**Assessment Method:** Create a solid model using AutoCAD. Create a		

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
and SolidWorks to create solid models. Distinguish between various types of projections used in engineering drawings. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	layout showing standard orthographics views using SOLVIEW/SOLDRAW. 1. not satisfactory 2. satisfactory 3. outstanding **Assessment Method Category:** Exam **Success Criterion:** Class average is at least 1.0. At least 80% of students got a 1 or higher.		
CAN Dept - Engineering - CAN ENGR 413 - Designing with CAD - Tolerances - Specify dimensions and tolerances in engineering graphics, including Geometric Dimensions and Tolerances. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** PROBLEM NO. 3: Geometric Dimensioning and Tolerancing Starting with the AutoCAD drawing file Test3_3_2007.dwg, add the geometric dimensioning information given below: a. On the right-side view, indicate depth dimension of the object using lower and upper limits of 0.995 and 1.005, respectively. b. Make the right-hand face in the right-side view flat within 0.005. Identify this surface as datum feature A. c. Make the lower surface in the front view perpendicular within 0.005 relative to primary datum feature A. Identify this surface as datum feature B. d. Make the right-hand face of the front view perpendicular within 0.005 relative to the primary datum feature A, and secondary datum feature B. Identify this surface as datum feature C. e. Add basic dimensions to locate the centerlines of the holes in the front view. f. Dimension the two holes using lower and upper limits of 1.000 and 1.005, respectively. Position these holes to be within 0.004 cylindrical tolerance zone at maximum material condition relative to primary datum feature A, secondary datum feature B, and tertiary datum feature C at maximum material condition. g. Dimension the width of the slot using lower and upper limits of 2.000 and 1.005, respectively. Position this slot to within a .006		

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
	tolerance at maximum material condition relative to primary datum feature B, and secondary datum feature C. h. On the front view, add a profile of a surface tolerance of 0.010 relative to primary datum feature A, secondary datum feature B, and tertiary datum feature C applied to the left plane, the fillet, and the top plane between the bottom left corner and the top right corner points. i. Add remaining necessary dimensions as basic dimensions. **Assessment Method Category:** Other **Success Criterion:** Class average of 20 out of 30.		
CAN Dept - Engineering - CAN ENGR 413 - Designing with CAD - Drawings - Prepare complete sets of working drawings and assemblies. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Lab on working drawings and assemblies. **Assessment Method Category:** Other **Success Criterion:** Class average of 20 out of 30 points.		
CAN Dept - Engineering - CAN ENGR 413 - Designing with CAD - Design - Apply the engineering design process to develop original solutions to engineering problems. (Created By CAN Dept - Engineering) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** 60% of project prototypes are functional. **Assessment Method Category:** Capstone Assignment/Project		
CAN Dept - Engineering - CAN ENGR 695 - Independent Study - Proposal - Write a proposal to perform an independent study of an engineering topic or problem. (Created By CAN Dept - Engineering) **Assessment Cycles:** 2010-2011 **Start Date:**	**Assessment Method:** Independent Study Form **Assessment Method Category:** Other **Success Criterion:** Success if submitted.		

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
02/23/2011 **End Date:** 08/15/2011 **Course Outcome Status:** Active			
CAN Dept - Engineering - CAN ENGR 695 - Independent Study - Literature search - Perform a literature search needed to support an independent study of an engineering topic. (Created By CAN Dept - Engineering) **Assessment Cycles:** 2010-2011 **Start Date:** 02/23/2011 **End Date:** 08/15/2011 **Course Outcome Status:** Active	**Assessment Method:** Student submission of reference list. **Assessment Method Category:** Other **Success Criterion:** Success if submitted.		
CAN Dept - Engineering - CAN ENGR 695 - Independent Study - Propose Solutiion - Formulate, refine, analyze and propose a solution to an engineering problem. (Created By CAN Dept - Engineering) **Assessment Cycles:** 2010-2011 **Start Date:** 02/23/2011 **End Date:** 08/15/2011 **Course Outcome Status:** Inactive	**Assessment Method:** Final report **Assessment Method Category:** Capstone Assignment/Project **Success Criterion:** All students submitted satisfactory final report.		
CAN Dept - Engineering - CAN ENGR 695 - Independent Study - Engineering Application - Apply engineering knowledge and skills, and use engineering tools to perform an independent research project on a selected engineering topic. (Created By CAN Dept - Engineering) **Assessment Cycles:** 2010-2011 **Course Outcome Status:** Inactive	**Assessment Method:** Final report **Assessment Method Category:** Capstone Assignment/Project **Success Criterion:** All students submitted satisfactory final reports.		

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CAN Dept - Engineering - CAN ENGR 695 - Independent Study - Written Report - Write a report that evaluates, analyzes and summarizes the results of the independent study following generally accepted guidelines in technical reports. (Created By CAN Dept - Engineering) **Assessment Cycles:** 2010-2011 **Start Date:** 02/23/2011 **End Date:** 08/15/2011 **Course Outcome Status:** Active	**Assessment Method:** Submission of Final Report **Assessment Method Category:** Capstone Assignment/Project **Success Criterion:** All students submitted satisfactory final report.		
CAN Dept - Engineering - CAN ENGR 695 - Independent Study - Oral Presentation - Prepare and deliver an oral presentation of the results of the independent study. (Created By CAN Dept - Engineering) **Assessment Cycles:** 2010-2011 **Start Date:** 02/23/2011 **End Date:** 08/15/2011 **Course Outcome Status:** Active	**Assessment Method:** Oral Presentation of Results of study. **Assessment Method Category:** Presentation/Performance **Success Criterion:** All students should have satisfactory oral presentations.		

Dept Course Assessment Report - Four Column

San Mateo CCCD

CAN Dept - Computer Information Science

Department Assessment Coordinator: Amelito Enriquez

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CAN Dept - Computer Information Science - CAN CIS 113 - Internet Programming with Ruby - Data types - Distinguish and use various Ruby data types (Created By CAN Dept - Computer Information Science) **Assessment Cycles:** 2010-2011 **Course Outcome Status:** Active	**Assessment Method:** Midterm-Problem 3 **Assessment Method Category:** Exam **Related Documents:** CIS 113 - Assessments	03/18/2011 - Class average 92 **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011 **Related Documents:** CIS 113 - Assessment Results CIS 113 - Assessment Results	
CAN Dept - Computer Information Science - CAN CIS 113 - Internet Programming with Ruby - Flow control techniques - Implement programming tasks using Ruby flow control techniques (Created By CAN Dept - Computer Information Science) **Course Outcome Status:** Active	**Assessment Method:** Midterm-Problem 4,5 **Assessment Method Category:** Exam	03/19/2011 - Class average 71 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Computer Information Science - CAN CIS 113 - Internet Programming with Ruby - Blocks and iterators - Understand and use Ruby blocks and iterators (Created By CAN Dept - Computer Information Science) **Course Outcome Status:** Active	**Assessment Method:** Midterm-Problem 6 **Assessment Method Category:** Exam	03/19/2011 - Class average 84. **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Computer Information Science - CAN CIS 113 - Internet Programming with Ruby - Arrays - Use arrays and hashes effectively (Created By CAN Dept - Computer Information Science) **Course Outcome Status:**	**Assessment Method:** Lab 3 **Assessment Method Category:** Other	03/19/2011 - Class average: 63 **Result Type:** Inconclusive **Reporting Cycle:** 2009 - 2010	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
Active			
CAN Dept - Computer Information Science - CAN CIS 113 - Internet Programming with Ruby - Classes - Use built-in Ruby classes and create new (user-defined) classes (Created By CAN Dept - Computer Information Science) **Course Outcome Status:** Active	**Assessment Method:** Midterm-Problem 8 **Assessment Method Category:** Exam	03/19/2011 - Class average: 70 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Computer Information Science - CAN CIS 113 - Internet Programming with Ruby - Modules - Use built-in Ruby modules and create new (user-defined) modules (Created By CAN Dept - Computer Information Science) **Course Outcome Status:** Active	**Assessment Method:** Midterm-Problem 8 **Assessment Method Category:** Exam	03/19/2011 - Class average: 70 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Computer Information Science - CAN CIS 113 - Internet Programming with Ruby - Exceptions - Use exceptions to handle various run-time errors (Created By CAN Dept - Computer Information Science) **Course Outcome Status:** Active	**Assessment Method:** Lab 4 **Assessment Method Category:** Other	03/19/2011 - Class average: 97 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Computer Information Science - CAN CIS 113 - Internet Programming with Ruby - Binary and text files - Read and write binary and text files (Created By CAN Dept - Computer Information Science) **Course Outcome Status:** Active	**Assessment Method:** Lab 1 **Assessment Method Category:** Other	03/19/2011 - Class average: 96 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Computer Information Science - CAN CIS 113 - Internet Programming with Ruby - CGI - Develop CGI programs (with embedded Ruby) (Created By CAN Dept - Computer Information Science) **Course Outcome Status:** Active	**Assessment Method:** Lab 2 **Assessment Method Category:** Other	03/19/2011 - Class average: 91 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CAN Dept - Computer Information Science - CAN CIS 113 - Internet Programming with Ruby - Client/server apps - Develop client/server apps using Ruby (Created By CAN Dept - Computer Information Science) **Course Outcome Status:** Active	**Assessment Method:** Photoalbum project **Assessment Method Category:** Capstone Assignment/Project	03/19/2011 - Class average: 58 **Result Type:** Inconclusive **Reporting Cycle:** 2009 - 2010	
CAN Dept - Computer Information Science - CAN CIS 113 - Internet Programming with Ruby - Graphical user interface - Develop Graphical User Interfaces in wxRuby (Created By CAN Dept - Computer Information Science) **Course Outcome Status:** Active	**Assessment Method:** GUI project **Assessment Method Category:** Capstone Assignment/Project	03/19/2011 - Class average: 58 **Result Type:** Inconclusive **Reporting Cycle:** 2009 - 2010	
CAN Dept - Computer Information Science - CAN CIS 113 - Internet Programming with Ruby - Ruby on Rails - Develop basic Ruby on Rails applications (Created By CAN Dept - Computer Information Science) **Course Outcome Status:** Active	**Assessment Method:** Final project **Assessment Method Category:** Capstone Assignment/Project	03/19/2011 - Class average: 72 **Result Type:** Criterion met **Reporting Cycle:** 2009 - 2010	
CAN Dept - Computer Information Science - CAN CIS 118 - Intro to Object-Oriented Prgm - Simple - Correctly write, compile and execute a Java program to solve a simple problem with user input. (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Write a program that asks the user to enter three test scores. The program should display each test score, as well as the average of the scores. **Assessment Method Category:** Other	03/28/2013 - Students demonstrated outcome by successfully writing and demonstrating program **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 06/07/2011 - Program must compile and run properly. Program must not crash and must handle erroneous user input (reprompt). Program must check for division by 0 and report correct result. 84.07 **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CAN Dept - Computer Information Science - CAN CIS 118 - Intro to Object-Oriented Prgm - Class - Correctly implement a class in Java and create a driver program to test the class. (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Write a class named Car that has the following fields: ? year - an int field that holds the year the car was made ? make - a String field that holds the make of the car ? speed - an int field that holds the car's current speed **Assessment Method Category:** Other	03/28/2013 - Students demonstrated outcome by successfully writing and demonstrating program **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013	
CAN Dept - Computer Information Science - CAN CIS 118 - Intro to Object-Oriented Prgm - decisions - Correctly use decision structures in a Java program to execute alternatives depending on user input. (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** A bank charges $10 per month plus the following check fees for a commercial checking account: $0.10 for each check if less than 20 checks were written $0.08 for each check if 20 through 39 checks were written $0.06 for each check if 40 through 59 checks were written $0.04 for each check if 60 or more checks were written The bank also charges an extra $15 if the account balance falls below $400 (before any check fees are applied). Design a class that stores the ending balance of an account and the number of checks written. It should also have a method that returns the bank's service fees for the month. **Assessment Method Category:** Other	03/28/2013 - Students demonstrated outcome by successfully writing and demonstrating program **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 06/07/2011 - Test program must compile and run properly. Solution must consist of a class containing approprite methods. Solution must handle errors. Solution must contain Javadoc comments. Solution must produce correct results for test input. 80.0 **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011	
CAN Dept - Computer Information Science - CAN CIS 118 - Intro to Object-Oriented Prgm - repetition - Correctly use repetition in a Java program to solve a problem. (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Write a program that correctly uses iteration. **Assessment Method Category:** Other		

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CAN Dept - Computer Information Science - CAN CIS 118 - Intro to Object-Oriented Prgm - Arrays and Files - Correctly use an array to store data read from a file, process the data and write the results to a file. (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Write a program that correctly uses an array **Assessment Method Category:** Other		
CAN Dept - Computer Information Science - CAN CIS 118 - Intro to Object-Oriented Prgm - GUI - Correctly implement a GUI interface for a Java application or applet. (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Write a program that utilizes a GUI interface **Assessment Method Category:** Other		
CAN Dept - Computer Information Science - CAN CIS 250 - Programming Methods I: C++ - control - Correctly use control structures in a program (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Write a program that plays a guessing game **Assessment Method Category:** Other	03/28/2013 - Students demonstrated outcome by successfully writing and demonstrating program **Result Type:** Criterion met **Reporting Cycle:** 2013 - 2014	
CAN Dept - Computer Information Science - CAN CIS 250 - Programming Methods I: C++ - array - Correctly use an array to solve a problem (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Write a program that lets the user enter the total rainforest for each of 12 months into an array of doubles. **Assessment Method Category:** Other	03/28/2013 - Students demonstrated outcome by successfully writing and demonstrating program **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 05/18/2011 - 17 out of 19 students were able to do this perfectly, and the remaining 2 declared the array but were unable to fill it with data correctly. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011	

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CAN Dept - Computer Information Science - CAN CIS 250 - Programming Methods I: C++ - pointers - Correctly use pointers, dynamic memory allocation and file operations to solve a problem. (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Write a program that reads a file of integers and dynamically allocates an array large enough for them. **Assessment Method Category:** Other	03/28/2013 - Students demonstrated outcome by successfully writing and demonstrating program **Result Type:** Criterion met **Reporting Cycle:** 2012 - 2013 05/18/2011 - 16 out of 19 students were able to do this correctly, and the remaining 3 students were unable to open the file and read the integers successfully. **Result Type:** Criterion met **Reporting Cycle:** 2010 - 2011	
CAN Dept - Computer Information Science - CAN CIS 250 - Programming Methods I: C++ - library - Correctly use library classes and exceptions to handle errors in a program (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Use a stack to create an RPN calculator and use exceptions to handle any errors. **Assessment Method Category:** Other		
CAN Dept - Computer Information Science - CAN CIS 250 - Programming Methods I: C++ - inheritance - Correctly use inheritance to solve a problem (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Design a class named Employee. Write one or more constructors and the appropriate accessor and mutator methods for the class. **Assessment Method Category:** Other		
CAN Dept - Computer Information Science - CAN CIS 252 - Programming Methods II: C++ - Big-O - Correctly use Big-O notation to describe how the runtime of an algorithm depends on size. (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:**	**Assessment Method:** Use Big-O to describe runtime of 2 algorithms for finding the sum of the numbers from 1 to N. **Assessment Method Category:** Other		

Course Outcomes	Means of Assessment & Success Criteria /	Results	Action & Follow-Up
Active			
CAN Dept - Computer Information Science - CAN CIS 252 - Programming Methods II: C++ - linked-list - Correctly use a linked-list to solve a problem (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Write a method that rearranges a linked list to put the nodes in even positions after the nodes in odd position in the list. **Assessment Method Category:** Other		
CAN Dept - Computer Information Science - CAN CIS 252 - Programming Methods II: C++ - ADT - Correctly implement an abstract data type (ADT) as a C++ class. (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Design and implement a double-ended queue. **Assessment Method Category:** Other		
CAN Dept - Computer Information Science - CAN CIS 252 - Programming Methods II: C++ - trees - Correctly use recursion to solve a problem with trees (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Write a recursive program that computes the internal path length of a binary tress. **Assessment Method Category:** Other		
CAN Dept - Computer Information Science - CAN CIS 252 - Programming Methods II: C++ - graphs - Correctly use recursion to solve a problem with graphs (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Write a recursive program that implements a depth-first search for graphs that are represented by adjacency lists. **Assessment Method Category:** Other		
CAN Dept - Computer Information Science - CAN CIS 252 - Programming Methods II: C++ - runtimes - Correctly determine the relative runtimes of different sort algorithms on arrays of different sizes. (Created By CAN Dept -	**Assessment Method:** Compare the relative runtimes for a variety of algorithms **Assessment Method Category:** Other		

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active			
CAN Dept - Computer Information Science - CAN CIS 252 - Programming Methods II: C++ - BST - Correctly solve a problem with binary search trees (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Write a method that returns the number of items in a BST with keys equal to a given key **Assessment Method Category:** Other		
CAN Dept - Computer Information Science - CAN CIS 252 - Programming Methods II: C++ - red-black - Correctly solve a problem with red-black trees (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Draw the red-black BST that results when you insert items with the keys EASYQUESTION in the order into an initially empty tree, using the bottom-up insertion method. **Assessment Method Category:** Other		
CAN Dept - Computer Information Science - CAN CIS 284 - Programming Methods I: Java - ADT - Correctly implement an abstract data type (ADT) as a Java class and create a driver program to test the class. (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Write a class named Car. Demonstrate the class in a program that creates a Car object, and then calls the accelerate method 5 times. **Assessment Method Category:** Other		
CAN Dept - Computer Information Science - CAN CIS 284 - Programming Methods I: Java - classes - Correctly use classes from the standard Java libraries to solve a problem (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Create a class MapTester. In it, use a HashMap to implement a phone book. **Assessment Method Category:** Other		

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CAN Dept - Computer Information Science - CAN CIS 284 - Programming Methods I: Java - inheritance - Correctly use inheritance relations to solve a problem (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Assume 4 classes with subclasses. Identify whether certain assignments are legal. **Assessment Method Category:** Other		
CAN Dept - Computer Information Science - CAN CIS 284 - Programming Methods I: Java - GUI - Correctly use graphical user interface (GUI) components to create a program. (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Design and build a GUI for a text editor **Assessment Method Category:** Other		
CAN Dept - Computer Information Science - CAN CIS 284 - Programming Methods I: Java - errors - Correctly use exceptions to handle errors in a program (Created By CAN Dept - Computer Information Science) **Start Date:** 01/17/2010 **Course Outcome Status:** Active	**Assessment Method:** Use a stack to create a RPN calculator and use exceptions to handle any errors **Assessment Method Category:** Other		
CAN Dept - Computer Information Science - CAN CIS 286 - Programming Methods II: Java - Big-O - Correctly use Big-O notation to describe how the runtime of an algorithm depends on size. (Created By CAN Dept - Computer Information Science) **Course Outcome Status:** Active	**Assessment Method:** Use Big-O notation to describe runtime of two algorithms for finding the sum of the numbers from 1 to N. Algorithm 1: use a loop to accumulate the sum of the integers from 1 to N. Algorithm 2: use the formula N*(N+1)/2 to calculate the sum of the integers from 1 to N. **Assessment Method Category:** Exam		
CAN Dept - Computer Information Science - CAN CIS 286 - Programming Methods II: Java - Linked-list - Correctly use a linked-list solve a problem. (Created By CAN Dept - Computer	**Assessment Method:** Write a method that rearranges a linked list to put the nodes in even positions after the nodes in odd position in the list, preserving the relative		

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
Information Science) **Course Outcome Status:** Active	order of both the evens and the odds. **Assessment Method Category:** Exam		
CAN Dept - Computer Information Science - CAN CIS 286 - Programming Methods II: Java - ADT - Correctly implement an abstract data type (ADT) as a Java class. (Created By CAN Dept - Computer Information Science) **Course Outcome Status:** Active	**Assessment Method:** Design and implement a double-ended queue (deque). **Assessment Method Category:** Exam		
CAN Dept - Computer Information Science - CAN CIS 286 - Programming Methods II: Java - Recursion with trees - Correctly use recursion to solve a problem with trees. (Created By CAN Dept - Computer Information Science)	**Assessment Method:** Write a recursive program that computes the internal path length of a binary tree. **Assessment Method Category:** Exam		
CAN Dept - Computer Information Science - CAN CIS 286 - Programming Methods II: Java - Recursion with graphs - Correctly use recursion to solve a problem with graphs. (Created By CAN Dept - Computer Information Science)	**Assessment Method:** Write a recursive program that implements a depth-first search for graphs that are represented by adjacency lists. **Assessment Method Category:** Exam		
CAN Dept - Computer Information Science - CAN CIS 286 - Programming Methods II: Java - Runtimes - Correctly determine the relative runtimes of different sort algorithms on arrays of different sizes. (Created By CAN Dept - Computer Information Science)	**Assessment Method:** Compare the relative runtimes of the following sort algorithms on arrays ranging in size from 1000 to 1000000 elements: insertion sort, bubble sort, shell sort, quicksort, heapsort. **Assessment Method Category:** Exam		
CAN Dept - Computer Information Science - CAN CIS 286 - Programming Methods II: Java - BSTs - Correctly solve a problem with binary search trees (BSTs). (Created By CAN Dept - Computer Information Science) **Course Outcome Status:** Active	**Assessment Method:** Write a method that returns the number of items in a BST with keys equal to a given key. **Assessment Method Category:** Exam		

Course Outcomes	Means of Assessment & Success Criteria / Tasks	Results	Action & Follow-Up
CAN Dept - Computer Information Science - CAN CIS 286 - Programming Methods II: Java - Red-black trees - Correctly solve a problem with red-black trees. (Created By CAN Dept - Computer Information Science) **Course Outcome Status:** Active	**Assessment Method:** Draw the red-black BST that results when you insert items with the keys EASYQUESTION in that order into an initially empty tree, using the bottom-up insertion method. **Assessment Method Category:** Exam		