## Unit Plan: Accomplishments and Goals

**Unit:** ENGINEERING  
**Division or Area to Which You Report:** Mathematics and Science  
**Author(s) of this Unit Plan:** Bruce Mayer, PE  
**Date:** 29-Feb-08

**Audience:** IPBC; Deans/Unit Administrators; Budget Committee  
**Purpose:** To provide evidence of progress on Strategic Planning Priorities from previous year and to provide input into planning for subsequent years.  
**Instructions:**
1. Insert the Goals & Objectives from your last year's unit plan “Part II, Section 2: Goals/Objectives (What you Hope to Accomplish)” into “Section 1: Accomplishments” below (2007-08 Unit Plans can be found here).  
2. Update accordingly, reflecting upon the activities you’ve undertaken in the past year. Be brief. No more than two pages.  
3. In Section 2, please include your new, revised, or continuing goals for the next year (some may be the same as before). No more than one page.  

Please make sure to number and list goals in PRIORITY ORDER (1, 2, 3, ETC.). This will determine where any new resources may be allocated.

Be sure to include accomplishments and goals related to Strategic Planning Priorities, including student learning.

**Note:** Priority Objectives and Strategic Plans are hyperlinked. Use Chabot Enrollment Management Committee Reports to generate Student Success and Equity data reports by course, discipline, and term. Use these data to inform your goals and objectives. (Note: Reports are only available on PC. If you are a Mac user, please have your dean print a copy)

### Section 1: Accomplishments from Last Year's 2006-2007 Unit Plan¹ (What You Have Done):

<table>
<thead>
<tr>
<th>No.</th>
<th>Goal/ Objective from last year's Unit Plan</th>
<th>Activities Undertaken to Achieve the Goal/Objective</th>
<th>Results</th>
<th>Priority Objective / Strategic Plan Goal</th>
<th>Accomplished?</th>
<th>Did you receive additional funds to support this goal/objective?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Improve course articulation to allow students to more quickly complete lower division study</td>
<td>Complete Formal Articulation proposals to ALL UC and CSU Colleges of Engineering</td>
<td>Wrote Proposals to CSU-Sacramento, and SFSU. Gained full articulation from UCBerkeley the ENGR22 course which had been partially articulated. Secured broad articulation from Sonoma State. Secured articulation for ENGR22 from CSU Northridge</td>
<td>16 19</td>
<td>In Process</td>
<td>NO</td>
</tr>
<tr>
<td>2</td>
<td>Raise community and student awareness of Engineering at Chabot</td>
<td>Continue and expand visits to district high schools. Continue internal recruiting. Work with the Chabot Outreach off to better coordinate the High School Effort Work with Chabot Counseling Group to Make More Contacts with the High Schools</td>
<td>Visited Castro Valley and KIPP middle school; will visit San Leandro High in May08, have tentative contact with Tennyson High. In Fall07 I visited six Chabot MTH, CHEM, PHYS, and CSCI courses, speaking to about 80 students At the invitation of R. Mendez, Chabot Outreach Officer, I spoke to 20 young people at the Union City Youth Summit With the assistance of Chabot Counseling I met the counseling team at Moreau Catholic high school, and I have made contact with counselors at San Leandro and Castro Valley High Schools</td>
<td>8 8a 8j.1 9 9c.1</td>
<td>In Process</td>
<td>NO</td>
</tr>
</tbody>
</table>

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¹ Per information provided by the PRC the Engineering PROGRAM REVIEW PROPOSAL was submitted in lieu of the Unit Plan for for 06-07 Academic year
<table>
<thead>
<tr>
<th>#</th>
<th>Support the Program Review Process for Engineering</th>
<th>Work with the Program Review Committee to provide proposal, actions, and reports as needed to support the Program Review Process</th>
<th>Wrote 8 draft proposals. Secured PRC approval for the final version dated 20Apr07. Wrote comprehensive student survey forms which were reviewed by CLArnold.</th>
<th>7</th>
<th>In Process</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Develop a Engineering Graphic Class Based on 3D Solid Modeling using SolidWorks Software</td>
<td>Develop New Course Curriculum Proposal Upon approval of the proposal Implement the New Course</td>
<td>No Longer Needed – UCBerkeley fully articulated the existing Engineering Graphics Course, ENGR22. See also item-1</td>
<td>19</td>
<td>N/A</td>
<td>NO</td>
</tr>
<tr>
<td>5</td>
<td>Add to ENGR43 Course Computer-Based Electrical Circuit Modeling</td>
<td>Update ENGR43 Course Outline Obtain the Educational (low cost) Version of PSPICETM</td>
<td>Not accomplished. Instead I assisted with Moving the ENGR43 physical Lab from Rm 1611 to Rm 1602. This allowed conversion of 1611 to classroom space to accommodate the loss of lecture room to Measure-B remodeling of the campus. This required significant modification of the lab exercises to allow for the use of the different oscilloscopes that equip rm 1602.</td>
<td>YES</td>
<td>by alternative actions</td>
<td>NO</td>
</tr>
<tr>
<td>6</td>
<td>Obtain State Approval for the AS Engineering Degree</td>
<td>Craft a professional Proposal. Adjust the proposal as needed to meet the needs of the approving body</td>
<td>Communicated with Stephanie Low at the State Chancellor’s office to secure advice on the proper procedures. Wrote application, and gained curriculum committee approval for it. Secured from UCBerkeley, UCDavis, and SJSU the state required university endorsements for the proposed degree</td>
<td>9</td>
<td>16</td>
<td>16a</td>
</tr>
<tr>
<td>7</td>
<td>Attend at least one Science or Engineering related event at a local High school</td>
<td>Secure an invitation to such an event Attend Event and Promote Chabot College</td>
<td>Attended the Union City Youth Summit on 02Feb08. Have tentative invitation to judge engineering designs at KIPP middle school in Late Sp08</td>
<td>8</td>
<td>8a</td>
<td>9</td>
</tr>
<tr>
<td>8</td>
<td>Assist LPC with “Load Leveling” for Engineering Graphics Instructor C. Baranouskas</td>
<td>Make ENGR22 at Chabot available for Ms. Baranouskas by finding an alternative class for which I would provide instruction. Assist Ms. Baranouskas with textbook, lab, and scheduling issues to ensure continued high quality student learning in ENGR22</td>
<td>Provided instruction for MTH65 in lieu of ENGR22. Assisted Ms. Baranouskas with securing need lab time for the ENGR22 class, and for setting appropriate schedules for the 08-09 academic year.</td>
<td>2</td>
<td>YES</td>
<td>NO</td>
</tr>
</tbody>
</table>

**Section 2: Goals/ Objectives (What You Hope to Accomplish):**
<table>
<thead>
<tr>
<th>No.</th>
<th>Goal/Objective</th>
<th>What you hope to accomplish</th>
<th>Proposed Activities Completed to Achieve Goal/Objective</th>
<th>Priority Objective / Strategic Plan Goal</th>
<th>Time Frame (semester, year, five years, etc.)</th>
<th>Are you including a request for additional resources in this unit plan? Yes/No If yes, what type?**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Improve course articulation to allow students to more quickly complete lower division study</td>
<td>Gain wide articulation of engineering courses which makes them useful and relevant to Chabot’s transfer-oriented Engineering Students</td>
<td>Complete Formal Articulation proposals to ALL UC and CSU Colleges of Engineering Work with Chabot’s articulation office to submit the proposals to the Universities</td>
<td>16 19</td>
<td>2 years</td>
<td>NO</td>
</tr>
<tr>
<td>2</td>
<td>Raise community and student awareness of Engineering at Chabot</td>
<td>Improve Chabot’s standing in the community. Improve enrollment in the engineering program Improve enrollment at Chabot in general</td>
<td>Continue and expand visits to district high schools. Continue internal recruiting. Work with the Chabot Outreach office to better coordinate the High School Effort</td>
<td>8 8a 8j.1 9 9c.1</td>
<td>3 years</td>
<td>NO</td>
</tr>
<tr>
<td>3</td>
<td>Support the Program Review Process for Engineering</td>
<td>Improve student learning, and keep the Engineering program relevant and dynamic</td>
<td>Work with the Program Review Committee to meet the commitments as described in the PRC-accepted Apr07 proposal</td>
<td>7</td>
<td>2 years</td>
<td>NO</td>
</tr>
<tr>
<td>4</td>
<td>Develop a Engineering Design and Analysis Course designed to articulate to UCBerkeley’s ENGIN-10 and SJSU’s ENGR010</td>
<td>Create a new course, tentatively numbered ENGR11. The 2-unit ENGR11 combined with the existing ENGR10 would articulate to equivalent 3-unit courses at UCB, SJSU, and others. Note that ENGIN-10 at UCB is new this year, and it is required for all engineering disciplines. SJSU’s ENGR010 is also required for all engineering students. Similar courses exist at other universities. Chabot must articulate to these new courses to keep the Chabot Engineering program relevant. See Appendix F and Appendix G for the UCB and SJSU course syllabi.</td>
<td>The New Course is tentatively numbered ENGR 11. Research UCB and SJSU Courses which are required for ALL engineering disciplines Write Course Outline designed to articulate to UCB &amp; SJSU. Secure Curriculum Committee approval for the new course Submit the Course Outline to UCB, SJSU, UCD, CalPolySLO and other universities with similar courses When a sufficient amount of articulation agreements are reached then commence offering the course on a once/year basis</td>
<td>4 16b</td>
<td>2 years</td>
<td>NO However some new equipment costing $3-5k may be required for equipment needed to meet the lab-component of articulation. These expenses, if required, would accrue in the 09-10 academic year</td>
</tr>
<tr>
<td>5</td>
<td>Move ENGR22 AutoCAD lab to new facility</td>
<td>Move the ENGR22 lab from the existing location in rm1618 to the new AutoCAD facility in rm926</td>
<td>Carefully coordinate with the Arts &amp; Humanities division, and the ENGR22 to produce a smooth transition to the new facility</td>
<td>24</td>
<td>Fall08 semester</td>
<td>NO</td>
</tr>
</tbody>
</table>

** List types such as “equipment,” “supplies,” “staffing,” “contractual services,” etc…
Appendix A – Articulation

I have developed a strong, and I believe, effective set of CoE's connections to help maximize articulation by setting course content
* UCBerkeley:
  ** Robert Giomi, Asst. Dean
  ** Nancy E. Purcille, Articulation officer
* CSU-EB: Prof. Saied Motavalli
* UCDavis: Prof. Gary Ford, Assoc. Dean
* San Jose State
  ** Prof. Ping Hsu, Assoc. Dean
  ** Prof. Emily Allen, Materials Engineering
  ** Prof. Fred Bariz, Dept. Chair, Mechanical Engineering
  ** Prof. Burford Furman, Mechanical Engineering
  ** Prof. James Freeman, Dept. Chair, Mechanical Engineering
  ** Ken Youssefi, Ph.D, Lecturer in Mechanical Engineering
* Cal Poly, SLO: Prof. Richard Savage
* UC Santa Cruz: Prof. Joel Ferguson, Assoc. Dean
San Francisco State: Prof. Nilgun Ozer
* Santa Clara University: Prof. Mark Ardema
* Humboldt State University: Prof. Margaret Lang
* Unviesity of the Pacific: Prof. Gary Martin, Asst. Dean

I also attend annual conferences that contain a course-content and articulation component:
* The California Higher Education Engineering Liaison Council (ELC)
* The San Jose State Community College Day/Conference

>>> "Robert F. Giomi" <giomi@berkeley.edu> 9/6/2007 9:41 AM >>>
Bruce,

I have good news for you. Your E 22 has been re-reviewed in light of some tweaking with our E 28 (graphics) and it is now fully articulated. You should hear something formal from your Articulation Office by the end of the month.

Best wishes and good luck with the new semester.
Bob

>>> Patty Faiman <patty.faiman@csun.edu> 11/19/2007 4:25 PM >>>

Dear Jane,

CSU Northridge faculty has approved articulation of:

ENGR 22 (CHABOT) = MSE 248 & 248L (CSUN)

MSE 248-248L is effective at CSU Northridge as of Fall 2007, so this articulation will be included in the CHABOT/CSUN 2007-08 articulation agreements when they are published on ASSIST.

I don’t seem to have the Chabot College 2007-08 Summary of Curricular Changes. Please send me a copy as soon as it becomes available.

Thank you,

Patty Faiman
Articulation Officer
CSU Northridge

Appendix B – High School, Community, and Internal Outreach

B. Mayer High School Recruiting and Outreach Visit Summary

<table>
<thead>
<tr>
<th>Date</th>
<th>Approx. Attendance</th>
<th>Venue</th>
</tr>
</thead>
<tbody>
<tr>
<td>03Feb04</td>
<td>10</td>
<td>Eden Area ROP Robotics Club, Hayward</td>
</tr>
<tr>
<td>21May04</td>
<td>30</td>
<td>San Lorenzo High School, Mr. A. Fishman Math Class</td>
</tr>
<tr>
<td>Date</td>
<td>Approx. Attendance</td>
<td>Venue</td>
</tr>
<tr>
<td>------------</td>
<td>-------------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>15Oct04</td>
<td>30</td>
<td>San Lorenzo High School, Mr. A. Fishman Math Class</td>
</tr>
<tr>
<td>18Feb05</td>
<td>25</td>
<td>San Lorenzo High School, Mr. A. Fishman Math Class</td>
</tr>
<tr>
<td>18Feb05</td>
<td>30</td>
<td>San Lorenzo High School, Ms. L. Evans Math Class</td>
</tr>
<tr>
<td>18Feb05</td>
<td>25</td>
<td>San Lorenzo High School, Mr. C. Cabana Math Class</td>
</tr>
<tr>
<td>09Dec05</td>
<td>25</td>
<td>San Lorenzo High School: A. Fishman Math Class</td>
</tr>
<tr>
<td>09Dec05</td>
<td>20</td>
<td>San Lorenzo High School: E. Mecking Math Class</td>
</tr>
<tr>
<td>07May05</td>
<td>8</td>
<td>Chabot Counseling PreCollege Student Early Enrollment “MegaDay” Engineering Workshop</td>
</tr>
<tr>
<td>23May05</td>
<td>25</td>
<td>James Logan High School, Mr. K. Prucha Math Class-1</td>
</tr>
<tr>
<td>23May05</td>
<td>25</td>
<td>James Logan High School, Mr. K. Prucha Math Class-2</td>
</tr>
<tr>
<td>23May05</td>
<td>25</td>
<td>James Logan High School, Mr. K. Prucha Math Class-3</td>
</tr>
<tr>
<td>22May06</td>
<td>24</td>
<td>San Lorenzo High School: A. Fishman Calculus Class</td>
</tr>
<tr>
<td>23May06</td>
<td>25</td>
<td>James Logan High: L. Rodrigues P1 College Math class</td>
</tr>
<tr>
<td>26May06</td>
<td>25</td>
<td>James Logan High: G. Olivero P3 Statistics Class</td>
</tr>
<tr>
<td>26May06</td>
<td>25</td>
<td>James Logan High: G. Olivero P4 Statistics Class</td>
</tr>
<tr>
<td>26May06</td>
<td>25</td>
<td>James Logan High: C. Lee P5 Statistics Class</td>
</tr>
<tr>
<td>26May06</td>
<td>25</td>
<td>James Logan High: C. Lee P8 College Math class</td>
</tr>
<tr>
<td>09Dec06</td>
<td>60</td>
<td>B. Mayer acted as Judge at San Lorenzo High School Science Fair – Talked to students and handed out Chabot Engineering Brochure</td>
</tr>
<tr>
<td>20Dec06</td>
<td>20</td>
<td>San Lorenzo High School: A. Vanderwerff Physics Class</td>
</tr>
<tr>
<td>20Dec06</td>
<td>25</td>
<td>San Lorenzo High School: A. Fishman Math Class</td>
</tr>
<tr>
<td>20Dec06</td>
<td>25</td>
<td>San Lorenzo High School: A. Fishman Math Class</td>
</tr>
<tr>
<td>23Feb07</td>
<td>25</td>
<td>James Logan High: L. Rodrigues P1 Math class</td>
</tr>
<tr>
<td>23Feb07</td>
<td>25</td>
<td>James Logan High: L. Rodrigues P4 Math class</td>
</tr>
<tr>
<td>23Feb07</td>
<td>35</td>
<td>James Logan High: G. Olivero P2 Math Class</td>
</tr>
<tr>
<td>23Feb07</td>
<td>30</td>
<td>James Logan High: G. Olivero P3 Math Class</td>
</tr>
<tr>
<td>23Feb07</td>
<td>25</td>
<td>James Logan High: C. Lee P6 Math class</td>
</tr>
<tr>
<td>23May07</td>
<td>25</td>
<td>San Lorenzo High School: A. Fishman Math Class</td>
</tr>
<tr>
<td>24May07</td>
<td>25</td>
<td>James Logan High: C. Lee P4 Statistics class</td>
</tr>
<tr>
<td>09Oct07</td>
<td>25</td>
<td>KIPP Summit Academy Middle School: Sylvia Gonsalves Drafting &amp; Design Class</td>
</tr>
<tr>
<td>11Oct07</td>
<td>25</td>
<td>Castro Valley High: Ashley Green P5 Environmental Science Class</td>
</tr>
<tr>
<td>11Oct07</td>
<td>25</td>
<td>Castro Valley High: Ashley Green P6 Environmental Science Class</td>
</tr>
<tr>
<td>24Oct07</td>
<td>36</td>
<td>San Lorenzo High School: A. Vanderwerff Physics Class</td>
</tr>
<tr>
<td>Date</td>
<td>Approx. Attendance</td>
<td>Venue</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------</td>
<td>----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>07Dec07</td>
<td>32</td>
<td>James Logan High: G. Olivero P2 College Math class</td>
</tr>
<tr>
<td>07Dec07</td>
<td>32</td>
<td>James Logan High: L. Rodrigues P5 College Math class, Presentation by Former Student Krishnil Mani²</td>
</tr>
<tr>
<td>07Dec07</td>
<td>32</td>
<td>James Logan High: L. Rodrigues P6 College Math class, Presentation by Former Student Krishnil Mani</td>
</tr>
<tr>
<td>07Dec07</td>
<td>32</td>
<td>James Logan High: L. Rodrigues P7 College Math class, Presentation by Former Student Krishnil Mani</td>
</tr>
<tr>
<td>03Feb08</td>
<td>20</td>
<td>Union City Youth Commission 2008 “Future in Hand” Youth Summit</td>
</tr>
<tr>
<td>12Feb08</td>
<td>100</td>
<td>Moreau Catholic High COUNSELING³ Team - Pam Howard, Jim Patterson, Dianna Heise</td>
</tr>
<tr>
<td>19Feb08</td>
<td>80</td>
<td>James Logan High: A. Cheng P[2,3,5] Introduction to Statistics classes</td>
</tr>
<tr>
<td>13Mar08</td>
<td>60</td>
<td>Castro Valley High: Rich Schneck Engineering &amp; Technology learning community⁴</td>
</tr>
<tr>
<td>May08</td>
<td>25</td>
<td>San Leandro High: Fred Lebe AP calculus class⁵</td>
</tr>
</tbody>
</table>

| Total Attending | 1271              |

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**Fall07 Internal Engineering Outreach Summary**

<table>
<thead>
<tr>
<th>Class</th>
<th>Instructor</th>
<th>No. Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>MTH1</td>
<td>MRube</td>
<td>5</td>
</tr>
<tr>
<td>MTH1</td>
<td>JAlegre</td>
<td>6</td>
</tr>
<tr>
<td>CHEM1A</td>
<td>WPitcher</td>
<td>20</td>
</tr>
<tr>
<td>CHEM1A</td>
<td>HSawhney</td>
<td>20</td>
</tr>
<tr>
<td>MTH1</td>
<td>CStubblebine</td>
<td>18</td>
</tr>
<tr>
<td>CSCI21</td>
<td>KMehl</td>
<td>9</td>
</tr>
</tbody>
</table>

² K. Mani is a James Logan graduate, and transfer student from Chabot to CalPoly-SLO. B. Mayer recruited him to make the Chabot Engineering OutReach Presentations at James Logan. Chabot thanks Cisco Systems for giving Mr. Mani the afternoon off from his CoOp Engineering Position at Cisco.

³ Number of student contacts is ESTIMATED based on the probable number of students who will informed about Chabot by the now Chabot-Knowledgeable Counseling team

⁴ PREDICTED attendance based on Mr. Schneck’s estimate

⁵ PREDICTED attendance based on Mr. Lebe’s estimate
Appendix C – Program Review

From: Bruce Mayer Thursday - August 16, 2007 7:02 PM
To: CArnold@chabotcollege.edu
Subject: Re: Request for assistance: Review Draft Survey

Carolyn,

Thanks for the careful review. Your suggestions have made my survey better. I've incorporated almost all of them.

I appreciate your time & assistance.

Regards, Bruce

>>> Carolyn Arnold <carnold@gw5mail.clpccd.cc.ca.us> 08/16/07 6:07 PM >>>

Bruce,

Your survey asks great questions! You should certainly facilitate some groups this way, and find out about your outreach and their sources of info.

I offer some edits and suggestions - take what you like and leave the rest! They are in Track changes now, with some comments. I may have mangled it, but I was trying to simplify, and make it easier to read. If you don't think so, change it back! I numbered all the later questions, so you can refer to them, but that might be too much - it certainly looked neater before!

The only other change I'd consider would be taking out all the 'Please's' in each question, since you have it in the directional statements now, but that is up to you.

Let me know how it turns out. I applaud your inquiring mind and support for your students.

Regards, Carolyn
Tom,

That's a good idea. I'll take a look at the existing electronics rooms. It's likely they will meet the needs of ENGR43. I'll get back to you.

Regards, Bruce

>>> Thomas Clark 8/22/2007 1:16 PM >>>
Bruce,

May I suggest that since we have some time available we may want to look at some other options. It might be interesting to explore the co-use of the "electronics" rooms and also get a feel of increasing pressure for multi-use rooms, or ???

Glad your items are accounted for.

tom

From: Bruce Mayer Wednesday - August 22, 2007 9:06 AM
To: Clark, Thomas
CC: Jahnke, Sarah
Subject: Electrical Engineering Lab in rm 1611 => use in Sp08

Tom,

Thanks for your help with the ENGR43 lab in 1611. I've designed 18 labs and a lab-exam around the instruments and components that had been in rm1611. With your help I need to reconstitute the lab for the Sp08 term (ENGR43 is offer Sp-Only). This should not be too difficult.

The game plan as we discussed it:
* All the hardware that was in 1611 has been moved to storage in 1616
* I will go thru the stored hardware and ID only the items needed for ENGR43
** this will about 10-15% of what had been in 1611, so the room will be much less cluttered than before
* You and I can then work on moving my Instruments/Components from 1616 back to 1611
* then everything will be wonderful

I appreciate all your help, Bruce

Appendix E – University Endorsements for the Chabot College AS Engineering Degree
January 31, 2008

Mr. Bruce Mayer, PE
Engineering Instructor
Chabot College, Rm 2032
25555 Hesperian Boulevard
Hayward, California 94545-2447

Dear Prof. Mayer,

The Undergraduate Affairs Office in the College of Engineering at UC Berkeley completed our analysis of the course-requirements in Chabot’s proposed Associate in Science Degree as described in your recent letter. Our examination of the proposed coursework concluded that, while completing this degree may not necessarily prepare a student for transfer to some engineering majors at UC Berkeley, it would give them a solid foundation for all majors. With a few additional department specific courses, students would have the preparation needed for admission to all our majors.

Consequently, the College of Engineering at UC Berkeley endorses the proposed Associate in Science degree in Engineering by Chabot College.

Sincerely,

Fiona M. Doyle
Executive Associate Dean
Mr. Bruce Mayer, PE
Engineering Instructor
Chabot College, Rm 2032
25555 Hesperian Boulevard
Hayward, California 94545-2447

Re: Endorsement of the Chabot College Associate in Science Degree in Engineering

As requested in your recent letter, my transfer admissions staff and I have reviewed the course-requirements for the proposed Associate in Science Degree in Engineering at Chabot College. Our analysis determined that students completing this program of study will be very well prepared to apply for transfer in the large majority of engineering majors offered by UC Davis.

The UC Davis College of Engineering strongly endorses the granting of the proposed Associate in Science in Engineering degree by Chabot College. We recommend that the California Community Colleges Chancellor's Office accept Chabot's proposal for this degree program.

Please contact my office if you need any additional information.

Sincerely,

[Signature]

Gary E. Ford
Professor of Electrical and Computer Engineering
Associate Dean for Undergraduate Study
1/25/08

Mr. Bruce Mayer, PE
Engineering Instructor
Chabot College, Rm 2032
25555 Hesperian Boulevard
Hayward, California 94545-2447

Re: Recommendation for approval of the A.S. Degree in Engineering at Chabot College

Thank you for recently providing the listing of course requirements for Chabot's proposed Associate in Science degree for Engineering. My office at the San José State University College of Engineering has completed our review of these course requirements in this proposed degree program as it relates to subsequent transfer the College of Engineering. In recent years SJSU has accepted approximately twenty Chabot students as engineering majors. The vast majority of these students followed a lower division course of study closely matching that described by the AS degree proposal. Our finding is that that students completing this program of study will be very well prepared to apply for transfer in the large majority engineering majors offered by San José State University.

This office strongly endorses acceptance of this degree program by the California Community Colleges Chancellor's Office. The College of Engineering at SJSU recommends that Chabot College offer the proposed Associate in Science degree in Engineering.

Should you need any further information, please do not hesitate to contact this office.

Sincerely yours,

Prof. Ping Hsu
Associate Dean for Undergraduate Studies
College of Engineering
San Jose State University
Appendix F - UCBerkeley ENGIN-10 Syllabus

UCBerkeley Engineering 10
Engineering Design and Analysis - Fall, 2007

Lectures 10 – 11 AM Monday, Wednesday and Friday
Lab 2 – 5 PM Tuesday, Wednesday or Thursday

Course Description
Engineering 10, Engineering Design and Analysis, is an introduction to the profession of engineering and its different disciplines through a variety of modular design and analysis projects. Hands-on creativity, teamwork, and effective communication are emphasized. Common lecture sessions address the essence of engineering design, the practice of engineering analysis, the societal context for engineering projects and the ethics of the engineering profession. Students develop design and analysis skills, and practice applying these skills to illustrative problems drawn from various engineering majors.

Course Objectives
Engineering Design and Analysis is a course that provides first year students a broad introduction to the profession of engineering and its different disciplines, through a variety of small group design and analysis projects. At the core of the course are projects and case studies, through which the main concepts of the course are developed. The objectives of the course are to:
• enhance critical thinking and design skills;
• introduce students to a broad view of engineering analysis and design;
• reinforce the importance of mathematics and science in engineering design and analysis;
• emphasize communication skills, both written and oral;
• develop teamwork skills;
• offer experience in hands-on, creative engineering projects;
• provide an introduction to different fields of engineering; and
• introduce students to professional ethics and the societal context of engineering practice.

Educational Outcomes
Through active participation in this course, students will:
• begin to recognize the role of mathematics and science in engineering;
• understand the design of systems, components, and processes to meet desired needs within realistic constraints;
• gain experience in working in multi-disciplinary teams;
• develop early abilities in identifying, formulating, and solving engineering problems;
• appreciate the importance of professional and ethical responsibility in engineering;
• obtain experience in effective communication;
• begin to understand the impact of engineering solutions in a global, economic, environmental, and societal context; and
• begin to use the techniques, skills, and engineering tools necessary for contemporary and future engineering practice.

Course Structure
All students meet for a common lecture series during the first three weeks of the semester and submit weekly homework assignments during this portion of the course. Students then participate in two successive six-week modules for the rest of the semester.
Each module of 60 students is administered by one faculty member, with support of up to three Graduate Student Instructors, for three hours of lecture and three hours of lab each week. The small-group lab sections, with a maximum of 20 students, allow student teams to address the module topic in depth. Students are assigned homework during the modules, and write a report or make a presentation (or both) at the end of each module. All students then take a final examination to evaluate the student’s integration of the course material (lectures and modules) during the semester.

**Lectures**
During the first three weeks, all students convene in the Sibley Auditorium of the Bechtel Engineering Center for common lectures. Each module will also have lectures scheduled for 10 – 11 in the room noted below.

**Modules**
Each student will take two of the four modules offered this semester. A brief description of each module is provided on the next several pages. Each module will last for six weeks, and will consist of lectures and lab or discussion sections, depending upon the module. The lab/discussion periods are intended for students to be able to work in small groups on problems posed in their module. Students will rank order their preference for module assignments, with a guarantee that each student will get at least one of his or her first two choices.

**Module Descriptions**

**Civil and Environmental Engineering Module Summary**

**Water Utilization During Extended Space Missions**
One major constraint on any space mission is the necessity to take everything that will be needed (or might be needed, and then some) with you. This includes not only tools, computers, supplies but also food, air to breathe, and water. From this point a spaceship is not different from The Spaceship Earth in concept though very different in scale. Only energy can be supplied to the spaceship from outside (barring any supply shuttles that are not feasible for deep space voyages) and even then the spaceship may take some energy supplies with it. Your goal will be to develop a conceptual (i.e., not yet very detailed but comprehensive) design of a system to keep the crew supplied with water on a year-long mission.

You need to think about how much water will be needed, how much can be carried in the spaceship, what it will be used for, how it will be recycled (moved around, cleaned, wasted).

We will go through smaller tasks and we will learn all necessary tools to arrive at your unique solution.

**Industrial Engineering and Operations Research Module**

**Real Life IEOR**
Have you ever wondered how Toyota manages to have automobiles roll off its assembly line every minute? Or how Starbucks decides where to open its next store and how much coffee beans to stock? Or how Disney determines how many ticket booths and turnstiles to open on 4th of July? Do you know what's happening behind the scenes at these companies?

These are just a few real life applications of industrial engineering and operations research (IEOR). The list goes on and on. In this module we will cover the basics of IEOR. The topics we will examine include, but are not limited to, mathematical programming, simulation modeling, and supply chain management. The principles you learn in this module will enable you to have a better understanding of the answers to the questions posed earlier.

**Material Science and Engineering Module**
Materials in Advanced Energy Technologies
The generation of energy from non-fossil sources and the storage of energy to operate electronics and vehicles are two major technological challenges. This module will (1) investigate the performance of (a) two devices intended to provide non-fossil energy: fuel cells and solar cells and (b) batteries intended to store charge in electronics and in electric vehicles, (2) explore the limitations of each device imposed by the materials used in one particular component.

Mechanical Engineering Module
Engineering and Near-Earth Asteroids
In July, 2004 an asteroid was discovered that was thought to have a reasonably high likelihood of hitting Earth some 25 to 30 years later. This “near Earth object,” which became known as Apophis, the Egyptian god of eternal darkness, prompted considerable discussion about what might be done to prevent the significant damage that would result from an asteroid strike.

The virtual destruction of some 800 square miles forest near Tunguska, Siberia in 1908 by a smaller asteroid highlights the devastation that can occur in such an event. This module will examine the science and engineering surrounding the detection and deflection of potentially dangerous asteroids. Students will consider aspects of orbital dynamics, and how the path of an asteroid might be altered so that a potential impact can be avoided. Issues such as cost, safety and probability of success will also be evaluated.

Appendix G - SJSU ENGR 010 Syllabus

SAN JOSÉ STATE UNIVERSITY
Charles W. Davidson College of Engineering

E10 Introduction to Engineering

E10 Course Syllabus Spring 2008
Course Description
E10 is designed to allow students to explore engineering through hands-on design projects, case studies, and problem-solving using computers. Students will learn about the various aspects of the engineering profession and acquire both technical skills and non-technical skills, in areas such as communication, team work, and engineering ethics. In addition, the course supports students in their efforts to succeed in engineering through personal and professional development.

Prerequisites: High School Geometry, Trigonometry, and Algebra.

Required Textbooks: There are no textbooks required for this course. All the lecture notes, assignments, and special instructions are contained in the SJSU eCampus website for E10. (See http://sjsu6.blackboard.com/webct/entryPageIns.dowebct to access the website.)

Other Requirements:
1. Each student shall be assigned to and be provided with an electronic “clicker” for a refundable deposit of $20.00.
2. Obtain a SJSU e-mail account.
3. Familiarize him/herself with the “eCampus website” for E10 navigation.
4. Download the free Autodesk “Inventor 2008” software via the SJSU e-mail account. (Refer to the instructions in the E10 eCampus website.)

**Laboratory:**
All students must register for and attend a 3-hour/week lab. Lab sections have ~24 students each and will be team based. Each team will consist of four (4) members and will be engaged in at least four (4) different projects, each revealing issues pertinent to the various engineering disciplines.

**Lecture:**
There will be two, 1-hour lectures per week. Several guest speakers will discuss various aspects of the engineering profession, engineering tools and non-technical skills, such as communication skills, team skills, global and environmental issues and engineering ethics.
Lecture homework will by assigned by the individual instructor/guest speaker.

**Participation:**
a. **Seminar:** iClickers will be used to answer questions during each and every lecture session, so make sure you bring your to lecture.
b. **Laboratory:** At the end of each laboratory session, each student shall complete, sign and turn in the Lab Activity Summary/Data collection form and write a short summary of what was learned during the session.

**Teamwork**
You will be required to work in teams for a number of assignments. Your contribution towards all assigned team projects must be proportionally equivalent to the rest of the team. Your Laboratory section instructor will form all the teams during the start of the semester.

**Academic Honesty**
Academic honesty is expected without question in this course. Students who are found to have submitted work that was obtained or produced dishonestly will suffer the following two consequences: (a) a grade of zero (0) will be given for the assignment in question; and (b) a report of the incident will be filed with the university. This report may stay on your permanent collegiate record and may also be subject to further disciplinary action being taken by the university. Examples of such work include, but are not limited to: papers you wrote for someone else, papers someone else wrote for you, plagiarism, and tests that you took for someone else or that someone else took for you. You can view the SJSU academic integrity policy at: [www.sa.sjsu.edu/judicial_affairs/index.html](http://www.sa.sjsu.edu/judicial_affairs/index.html)

**Grading**

- **Lecture:**.................................................40%
- **Participation:**........15%
- **Homework:**........ 10%
- **Final**.................... 15%

**Laboratory:**.................................................60%
- **Participation/Lab Activities** ..................... 21%
- **Excel report/results**................................. 5%
- **Turbine project report/results/presentation**.... 15%
- **S/F cells report/results**...............................5%
- **Robotics results**..........................14%

**TOTAL: 100% = 1,000 points** (excluding the extra points)
Extra points:
Students can earn extra points in the following ways:
1) Joining a student chapter of an engineering professional society during the first five(5) weeks of the semester: = 30 pts. Note: you must furnish proof of membership to your laboratory instructor in order to earn these points.
2) Attending the “Silicon Valley Leaders Symposium” series: = 50 pts. (~ 5 pts/Symposium) . Note: to obtain points for attendance at this seminar series, you MUST register electronically before each seminar. Points will not be given retroactively if you neglect to register, but still attend the seminar.

Letter Grade Distribution:
850 points < A-, A, A+ < 1,000 points
700 points < B-, B, B+ < 849 points
600 points < C-, C, C+ < 699 points
500 points < D-, D, D+ < 599 points