ENGINEERING PROGRAM REVIEW COMMITTEE MEMBERS
2007-2008

Richard J. Fernandes, Full-Time Faculty
Bruce Stoner, Full-Time Faculty
Eric Rabitoy, Dean of Science, Engineering, and Health Sciences
Lillian LaSpina Administrative Secretary
Chris Pagano, Administrative Secretary
Jeremy Clark, Academic Senate Representative
David Kary, Curriculum Representative
Irene Malmgren, Vice President of Instruction
Michelle Plug, Articulation Officer
Lucinda Over, Dean of Counseling
John Thompson, Dean of Library and Information Services
Linda Welz, Chief Information Services Officer
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FACULTY

FULL-TIME FACULTY:
  Dr. Richard J. Fernandes AIA
  Bruce Stoner

ADJUNCT FACULTY:
  Susanna Au Associate AIA
  Leigh Buchwald
  David Endo
  Catherine Gong
  Michael Moore
  Aaron Ruiz
  Flint Tabata
  Jose Villanueva
  Jane Yu
### ENGINEERING

**Advisory Committee**
**Meets Annually**
**Average Attendance 30 Members**

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<tr>
<th>Name</th>
<th>Title/Position</th>
<th>Institution</th>
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<tr>
<td>Susanna Au</td>
<td>Architecture</td>
<td>Citrus College</td>
</tr>
<tr>
<td>Dexter Tanksley AIA</td>
<td></td>
<td>Walt Disney Imagineering</td>
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<tr>
<td>Michael Moore</td>
<td>East San Gabriel ROP</td>
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<tr>
<td>Bruce Stoner</td>
<td>Electronics Instructor</td>
<td>Citrus College</td>
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<tr>
<td>Bernard Barroga</td>
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<td>CSGV ROP</td>
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<tr>
<td>Jane Chu</td>
<td>Civil Engineer</td>
<td>Citrus College</td>
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<tr>
<td>Dexter Tanksley AIA</td>
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<tr>
<td>Jane Chu</td>
<td>Civil Engineer</td>
<td>Citrus College</td>
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<tr>
<td>Daryl Akioka</td>
<td>Drafting</td>
<td>Azusa High School</td>
</tr>
<tr>
<td>Sherry Griffes</td>
<td>Past Student President ASEA</td>
<td></td>
</tr>
<tr>
<td>Mary Ann Rachford</td>
<td>Art Professor</td>
<td>Citrus College</td>
</tr>
<tr>
<td>Dr. Virgil Seaman</td>
<td></td>
<td>Cal State University LA</td>
</tr>
<tr>
<td>Dr. Virgil Seaman</td>
<td></td>
<td>Dept. of Technology</td>
</tr>
<tr>
<td>Tom Paton</td>
<td>Paton and Associates</td>
<td>AutoCAD</td>
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<tr>
<td>Frank Paton</td>
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<td>AutoCAD</td>
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<tr>
<td>Jess Kuncar</td>
<td>Architect</td>
<td>Walt Disney Imagineering</td>
</tr>
<tr>
<td>Kimberly Bowen AIA</td>
<td>Architect, Instructor</td>
<td>Citrus College</td>
</tr>
<tr>
<td>Ken Zamora AIA</td>
<td>Architect</td>
<td>Instructor, Fresno City College</td>
</tr>
<tr>
<td>Elanie Moore</td>
<td>Art Professor</td>
<td>Citrus College</td>
</tr>
<tr>
<td>Matt Jackson</td>
<td>Art Professor</td>
<td>Citrus College</td>
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<tr>
<td>Joe Serar</td>
<td>Engineer</td>
<td>Glendora</td>
</tr>
<tr>
<td>Dr. Richard Fernandes AIA</td>
<td>Architect Professor</td>
<td>Citrus College</td>
</tr>
<tr>
<td>Sidney Pedraza</td>
<td>Architect</td>
<td>Diamond Bar</td>
</tr>
<tr>
<td>Troy Aday AIA</td>
<td>Aday Architects</td>
<td>Glendora</td>
</tr>
<tr>
<td>Eric Rabitoy</td>
<td>Dean of Science and Engineering</td>
<td>Citrus College</td>
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<tr>
<td>Prof. George Proctor AIA</td>
<td></td>
<td>Cal Poly Pomona</td>
</tr>
<tr>
<td>Aaron Ruiz</td>
<td>Architect, Teacher</td>
<td>Glendora</td>
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<tr>
<td>Elanie Moore</td>
<td>Art Professor</td>
<td>Citrus College</td>
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<tr>
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<td>Aday Architects</td>
<td>Glendora</td>
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DEGREE AND LIST OF CERTIFICATES OFFERED
In addition to an AS degree in Engineering and a transfer program, the following certificates are available:

- **DIGITAL DESIGN MEDIA** (To be moved to the Art Department)
- **INFORMATION TECHNOLOGY** Required Courses: PHYS 110, ENGR 104, ENGR 107, ENGR 108, ENGR 109 (20 Units).
- **ENGINEERING CAD MANAGEMENT CERTIFICATE (Proposed)**
  Required Courses: ENGR 100, ENGR 104, ENGR 107, ENGR 108, ENGR 125, DRAF 101, DRAF 190, and ENGR 126 (New 3D CAD course) (26 or 27 Units).

**SEQUENCE OF COURSES - ENGINEERING - General**
ENGR 100 - Introduction to Technology
ENGR 122 - Engineering Drawing
ENGR 125 - Introduction to Engineering CAD
ENGR 126 - (New 3D CAD course)
ENGR 130 - Engineering Graphics
ENGR 135 – Statics
ENGR 136 – (New Dynamics course)

**Drafting Ancillary Courses:**
DRAF 101 - Mechanical Drawing

**Math Ancillary Courses:**
MATH 190 - Calculus with Analytic Geometry
MATH 191 - Calculus with Analytic Geometry II
MATH 210 - Calculus with Analytic Geometry III
MATH 211 - Differential Equations

**Physics Ancillary Courses:**
PHYS 201  Physics
PHYS 202  Physics
PHYS 203  Physics

**SEQUENCE OF COURSES - ENGINEERING - Information Technology**
PHYS 110  Introduction to College Physics
ENGR 104  PC Hardware and Maintenance
ENGR 107  Network Technology
ENGR 108  Networking Operating Systems
ENGR 109  Network and Computer Security

**Drafting Ancillary Courses:**
DRAF 101  Mechanical Drawing

**Engineering Ancillary Courses:**
ENGR 100  Introduction to Engineering
ENGR 130  Engineering Graphics

**Math Ancillary Courses:**
MATH 130  Elementary Algebra

**Physics Ancillary Courses:**
PHYS 110  Introduction to College Physics
Transferable Engineering Courses:

<table>
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<th>UC:</th>
<th>CSU:</th>
<th>USC:</th>
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<tbody>
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<td>ENGR 122</td>
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<tr>
<td>ENGR 135</td>
<td>ENGR 135</td>
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</tbody>
</table>

Major Preparation:

| ENGR 122 | UCB, UCR, UCSB |
| ENGR 125 | UCSB          |
| ENGR 130 | CSUF, CSU SLO, UCB, UCI, UCR, UCSB |
| ENGR 135 | UC           |

The Engineering program has numerous classes that have not been offered in the last few semesters due to the Digital Design Media, Digital Web Design, and Advanced Digital and Web Design certificates being moved to Fine and Performing Arts Department. The Engineering department has recommended elimination of ENGR 110, 111, 112, 113, 114, 115, 116, 117, 184, 185, 186, 187, 188 and 189 from the program. Therefore ENGR 105, 106, 110, 111, 112, 113, 114, 115, 116, 117, 184, 185, 186, 187, 188 and 189 have ART equivalent classes in the Art Department.

ENGR 105 and 106 Visual Basic classes are no longer taught.
The Engineering Program has adopted the Institutional General Education Competencies of Citrus College. The General Education Competencies (as set forth in the Academic Senate minutes dated August 25th 2004) are as follows:

**Institutional General Education Competencies - Part of Institutional Mission**

General education competencies serve as a common set of core curricular components identified and defined by faculty. Student learning outcomes are behaviors based on these competencies.

Any student transferring, completing a degree or certificates from Citrus College, must demonstrate effectively assessed awareness, understanding, knowledge, skills, and abilities in the selected competencies.

1. Communication (personal expression and information acquisition)

   **Examples**
   - Reading analytically and critically
   - Writing with clarity and fluency
   - Speaking articulately
   - Listening actively

2. Computation

   **Examples**
   - Technology
   - Math proficiency
   - Analyzing and using numerical data
   - Application of mathematical concepts and reasoning
   - Computer proficiency
   - Decision analysis
   - (Synthesis and evaluation)

3. Creative, Critical, and Analytical Thinking

   **Examples**
   - Curiosity
   - Analysis
   - Synthesis
   - Evaluation
   - Creativity
   - Research
   - Learning Strategies
   - Problem Solving
   - Decision making
   - Aesthetic awareness

4. Community, Critical, and Analytical Thinking

   **Examples**
   - Respect for others beings
   - Cultural awareness
   - Ethics
   - Community service
   - Integrity
   - Citizenship
   - Interpersonal skills
   - Lifelong learning
   - Self esteem
   - Empathy

5. Technology/information competency

   **Examples**
   - Basic computing and word processing

6. Discipline/subject Area Specific Content Material - Project Plan
PROGRAM DESCRIPTION
The Engineering Program encompasses an area of study which includes basic and advanced engineering, design, management principles, CAD, and 3D animation software. The Engineering Program has outstanding dedicated faculty preparing students for transfer to universities, advancing professional careers, and personal development. The program combines classroom lectures, demonstrations, and an extensive use of state-of-the-art technology making certain training is always current.

PROGRAM HISTORY
Program indicator data illustrates a dramatic decline in Weekly Student Contact Hours beginning the Fall of ’03 to present (808 to 470 WSCH). This was largely due to Major budget cuts and a loss of most adjunct faculty from Fall of ’03 to Fall of ’06 (4.31 to 2.56 Full-Time Equivalent Faculty). Classes were cut from 16 to 9 from Fall of ’03 to Fall of ’06. The Engineering program is currently in a rebuilding mode which began in the Fall of ’06 and should be finalized in the Fall of ’10. Please see program indicator data for greater detail.

It should also be noted that most of the Engineering Drawing and Engineering CAD classes are taught concurrently with the Drafting Technology classes. The positive view of this format is it allows students to be exposed to multiple uses of Engineering, Architecture and Computer Generated Imagery. Drafting is also known as Engineering Drawing, Architectural Drawing, and Mechanical Drawing.

The Engineering review is separate from the Drafting Technology review. However, in the future both reviews should be done concurrently.

PROGRAM STUDENT LEARNING OUTCOMES:
Engineering students will have a broad understanding of Engineering. Students will be able to design, interpret, analyze, and evaluate engineering projects.

Engineering students completing courses in the Engineering Program will have acquired understanding, knowledge, skills and abilities in the following competencies:

Communication
Engineering students will use proper vocabulary and notation when describing Engineering concepts. They will be able to communicate these concepts to others both verbally and in written form. They will be able to critically analyze Engineering information found in print, visual or online media such as engineering technical and non-technical books, journals, articles, web pages, television, and film.

Computation
Engineering students will apply Engineering concepts in mathematical form using the appropriate computational skills for the course. This may include numeric calculation using simple algebra, calculus with analytic geometry, graphical analysis, the evaluation of mathematical expressions and engineering technical drawings.
Creative, Critical, and Analytical Thinking
Engineering students will develop an understanding of and curiosity toward engineering through problem solving, decision making, and critical thinking skills. Engineering students will develop an understanding of interactions in the engineering world as evidenced by successful completion of engineering program courses.

Community, Global Consciousness
Engineering students will think logically and coherently about engineering issues and gain an appreciation for the global social and political impact of engineering endeavors. By working together in lab and/or on projects, students develop interpersonal skills and respect for others. Through team learning, they will acquire an understanding for the need of Lifelong Learning.

Technology/Information Competency
Engineering students will be adept at using computers for word processing, data analysis, tutorials, simulations and/or web-based research as appropriate for each course. For laboratory courses, students will demonstrate fundamental aptitudes in the proper use of mechanical and/or electrical devices. Specific skills such as Networking, AutoCAD and MAYA and other applications will be used in appropriate courses.

Discipline Specific Content
Engineering students will demonstrate an understanding of the fundamental principles of Engineering at levels appropriate to each course. Students will distinguish between engineering technical and non-technical questions and methods and understand Engineering as a process. Students will understand the complex problems involved in valid technology and engineering.

PROGRAM GOALS
- Comprehensive major preparation and transfer credit to four year colleges and universities.
- Meet the student learning outcomes and core competencies institutionalized by Citrus College.
- Provide basic knowledge and skills for student’s success.
- Prepare students to enter the job market.
- Provide courses required for students to complete the certificates and/or Associate of Science degree.
- Provide classes for enrichment and upgrading of skills for currently employed students.
- Provide classes to support other curricular areas on campus.
SLO TIMELINE
The ENGINEERING Program will revise and develop student learning outcomes for all classes offered at Citrus College based on the following schedule:

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Projected Date to Develop Course Outline</th>
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</thead>
<tbody>
<tr>
<td>ENGR 100 - Principles of Technology</td>
<td>August 2008</td>
</tr>
<tr>
<td>ENGR 104 - PC Hardware and Maintenance</td>
<td>August 2008</td>
</tr>
<tr>
<td>ENGR 107 - Network Technology</td>
<td>March 2009</td>
</tr>
<tr>
<td>ENGR 108 - Networking Operating Systems</td>
<td>March 2009</td>
</tr>
<tr>
<td>ENGR 109 – Network and Computer Security</td>
<td>Completed</td>
</tr>
<tr>
<td>ENGR 122 - Engineering Drawing</td>
<td>August 2009</td>
</tr>
<tr>
<td>ENGR 125 - Introduction to Engineering CAD</td>
<td>March 2009</td>
</tr>
<tr>
<td>ENGR 126 - Introduction to Engineering 3D CAD (Proposed)</td>
<td>March 2009</td>
</tr>
<tr>
<td>ENGR 130 - Engineering Graphics</td>
<td>March 2009</td>
</tr>
<tr>
<td>ENGR 135 - Statics</td>
<td>Completed</td>
</tr>
<tr>
<td>ENGR 136 – Dynamics (Proposed)</td>
<td>August 2008</td>
</tr>
</tbody>
</table>

Any new classes developed will have student learning outcomes developed when the curriculum is submitted to the curriculum committee.

The department will work with the curriculum committee to ensure the course outlines are being developed according to standards developed by the committee.
MISSION

COMMENDATIONS

1. The Engineering Program meets the mission and the core competencies of the District. Engineering courses deliver high quality instruction that empowers students to compete globally and to contribute to the economic growth of today's society. Engineering courses are dedicated to fostering a diverse educational community and cultural learning environment that supports student success in pursuit of academic excellence, economic opportunity, and personal achievement.

2. The Engineering Program stresses problem solving, teamwork, communication skills, computation, use of technology and critical/analytical thinking as part of each course.

3. Engineering Program continues to attract students from culturally diverse groups. (See Core Indicators Demographics)

4. The Engineering Program course sequence leads logically toward program goals as recommended by the advisory council.

5. ENGR 135 Statics was added to the curriculum.

PREVIOUS RECOMMENDATIONS COMPLETED

1. The Engineering Program should meet the mission and the core competencies of the District. Engineering courses should deliver high quality instruction that empowers students to compete globally and to contribute to the economic growth of today's society.

The Engineering Program achieved the mission and the core competencies of the District. Engineering courses deliver high quality instruction that empowers students to compete globally and to contribute to the economic growth of today's society.

2. The Engineering Program should stress problem solving, teamwork, communication skills, computation, use of technology and critical/analytical thinking as part of each course.

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3. The Engineering Program course sequence should lead logically toward program goals as recommended by the advisory council.

Engineering Program course sequences lead logically toward program goals as recommended by the advisory council.

RECOMMENDATIONS

1. List the Engineering Program Certificates in the College Catalog and update periodically to keep current.

2. List appropriate cross referencing in the College Catalog and class schedule.

3. Utilize marketing and recruitment techniques to attract students in our district and to ensure that the District's diversity continues to be represented in the Engineering Program. (See Core Indicators, Females only represent 30 to 13% of enrollment).
NEED

COMMENDATIONS
1. The Engineering Program is constantly changing to meet the demands of the workplace through Advisory Council recommendations.
2. The Engineering Program has course offerings scheduled in the day and evening to meet the needs of students.
3. The Engineering Program has articulated courses with local high schools.
4. The Engineering Program provides occupational education for students preparing for employment.

PREVIOUS RECOMMENDATIONS COMPLETED
1. Course sequencing should allow students to accomplish their goals in two years. A full-time student is able to complete either of the Engineering Program Certificates in two years.
   Course sequencing allows students to accomplish their goals in two years. A full-time student is able to complete either of the Engineering Program Certificates in two years.
2. Clarify current Engineering Certificate structure with the Chancellor’s Office personnel.
   Current Engineering Certificate structure has been clarified with the Chancellor’s Office personnel.
3. Evaluated and revised specific Engineering Program class content in order to better prepare students for employment or transfer.
   Evaluated and revised specific Engineering program class content to better prepare students for employment or transfer.

RECOMMENDATIONS
1. Evaluate and revise specific class content in order to better prepare students for employment or transfer.
2. Work with Counseling and the Transfer Center to obtain an extensive understanding of the Engineering Program.
3. Review offerings during the day and evening as student demand increases.
4. Initiate contact with the local business community and the Advisory Committee to provide input that will enhance the Engineering Program.
5. Review and enhance the Engineering major for the Associate of Science degree (AS). Revise Engineering classes to facilitate expansion of the program and meet the demands of the workplace.
6. Initiate contact with the local business community and the Advisory Committee to provide input that will enhance the Engineering Program.
7. Provide additional promotion of the Engineering Program via engineering student ambassadors. Ambassadors should have the necessary communication skills.
QUALITY COMMENDATIONS

1. Student learning outcomes are being developed for all Engineering Program classes in the program. Engineering Program classes are to be revised and developed according to the schedule stated in this document.
2. Engineering Program Faculty meet District qualifications.
3. Engineering Program faculty are diverse.
4. Engineering Program courses demand critical thinking at all levels to insure student success.
5. Faculty development is exemplary for the Engineering Program. Faculty are constantly updating skills via conferences, workshops and as presenters of workshops.
6. Students are very active members of the American Society of Engineers and Architects. Over the last five years students have won a minimum of $3,000.00 in scholarships per year.

PREVIOUS RECOMMENDATIONS COMPLETED

1. Course should articulate with four year institutions.
   
   Courses articulate with four year institutions.

2. The Engineering Program should continue to change to remain current with the needs of the industry, based on input from the Advisory Committee.

   The Engineering Program remains current with the needs of the industry, based on input from the Advisory Committee.

3. Faculty members should attend certification classes, in-services, conferences, and conventions to update their expertise.

   Faculty members attended certification classes, in-services, conferences, and conventions to update their expertise.

4. Labs should have state-of-the-art computer equipment and software programs.

   Labs have state-of-the-art computer equipment and software programs.

5. Apply for grants to fund the purchase of equipment for the department.

   Faculty members have applied for and received grants to fund the purchase of equipment for the department.

RECOMMENDATIONS

1. Maintain and expand the use of the Advisory Committee in setting the direction of the Engineering Program.
2. Work with Advisory Committee to establish a wider range of internships and job opportunities.
3. Work with the Citrus College Transfer Center to help students who seek to transfer to either public or private universities.
4. Develop, revise, and integrate Student Learning Outcomes into each Engineering Program course outline and syllabus according to the schedule stated in this document.
5. Engineering Program class descriptions should be reviewed and modified as needed.
6. ENGR 100 will be revised and made part of a survey course and be added to CAD Management Certificate in the near future.
7. ENGR 104 will be revised with new SLOs. More students are anticipated because of the new CAD Management Certificate. ENGR 104 will be required for 3 certificates.
8. ENGR 136 Dynamics will be added to the curriculum.
9. Seek expansion of articulation agreements with four year institutions. The major Universities to focus on are Cal Poly, Cal State LA, Cal State Fullerton, Berkley and UCLA.
10. Articulate with additional local high schools.
11. Review Engineering Program syllabi, course outlines, and course prerequisites, and the long-range plan in respect to State and District requirements.

FEASIBILITY
COMMENDATIONS
1. Labs have the latest audio-visual equipment
2. Students are currently able to use the lab facilities for class assignments during professor office hours.

PREVIOUS RECOMMENDATIONS COMPLETED
1. Continue to be leaders in incorporating technology into the instructional program.
   *Faculty members continue to be leaders in incorporating technology into their instructional program.*
2. Upgraded software and equipment in labs is constantly to meet Engineering Industry standards.
   *Software and equipment in the labs is constantly being upgraded to meet Engineering Industry standards.*
3. Evaluate the extent to which several separate discipline areas can integrate their courses into the overall Engineering Program.
   *Courses were revised and removed from curriculum.*

RECOMMENDATIONS
1. Integrate state-of-the-art technology within the curriculum. Both software and hardware must be maintained at or above industry standards.
2. Provide access to the Citrus College web site for online student portfolio presentation.
3. Increase utilization of technology in Engineering Program courses. Both software and hardware must be maintained at or above industry standards. The cost per year is approximately $15,000.00 for software. However, the costs are shared with Drafting Technology.

COMPLIANCE
COMMENDATIONS
1. The Engineering Program transfers to the California State University, University of California, and private university systems. Three local
secondary institutions: Cal Poly, CSULA, and Cal State Fullerton are traditionally where students transfer.
2. Course requisites meet Federal, State and District requirements.
3. Existing Course Outlines are being updated to reflect new requirements.
4. Students in the Engineering Program are committed to community service – City of Hope, Save the Hollywood Bowl, shelters for the homeless, and many other projects.

RECOMMENDATIONS
1. Review the Engineering Program by faculty and the Advisory Committee to ensure relevancy to the needs of the business world and articulation with California State University, University of California, and private universities.
Present:

**Architecture**  
Flint Tabata AIA  
Adrian Erb AIA  
Carlos E. Hernandez  
Michael Moore  
Micah Peterson  
Michael Richter  
Aaron Ruiz AIA  
Jackson Walters PE  
Dr. Richard J. Fernandes AIA

**CGI**  
Susanna Au AIC  
Bernard Barroga  
Glenn Croft  
Chris Milar  
Lori Pezold  
Matt Phillips  
Eric Rodriguez  
Daniel Stocking

**Engineering**  
Jane C. Yu PE  
Rick Graham  
Richard Granger PE  
Andrew Huettner  
Dr. Bill T. Husung  
Glenna Johnson PE  
Jonathan Polasik  
Roya Ardelan PE

Welcome and introductions by Dr. Fernandes.

Discussion on the proposed Tech Prep College and Career Pathway with Azusa High before breaking into groups, Dr. Fernandes asked for a vote on the proposed Tech Prep College and Career Pathway 2007-2008 Partnership. The vote was unanimous to adopt the Pathway Partnership.

Dr. Fernandes shared the 2008-2009 Tech Prep Meeting Schedule. It was approved unanimously.

Carlos Hernandez and Eric Rodriguez were nominated and confirmed as business representatives for the Tech Prep Committee. Carlos will attend the meeting for Architecture and Engineering. Eric will attend the meeting for Arts Media in the Entertainment Industry.

**BREAKOUT GROUPS:**

**Architectural Group**

1. Put yourself 5-10 years into the future. Visualize the **Design Technology Schools** you really want as if they exist now. What is life like?
   - Real office environment /experience
   - Design of Real life buildings
   - Higher emphasis on Technology
   - Current use of Technology/3D
   - Designers will do it ALL (Drafting, engineering, and production CAD drawings)
   - Students will use Critical Thinking
2. **List your accomplishment since 2005, with special reference to “What Future for Design Technology Schools.”**
   Advances in software:
   - Digital Prototyping
   - Software integration

3. **Spend enough time to imagine concretely the Design Technology Schools in which your group wants to work. This is an exercise in creative dreaming – of the kind of community you want to work toward…**
   - Dedicated space for design, drafting, modeling, etc.
   - Combined workstations

**CGI Group**

1. **Put yourself 5-10 years into the future. Visualize the Design Technology Schools you really want as if they exist now. What is life like?**
   - Industry Networking:
     - Gaming
     - Studios
   - Various course offerings and Career Pathways:
     - Gaming
     - Architecture
     - Engineering
   - Department Branding:
     - Animation School
     - Gaming School
   - Company Sponsorships

2. **List your accomplishment since 2005, with special reference to “What Future for Design Technology Schools.”**
   - Software availability for students relative to the CGI industry
   - Up to date hardware:
     - Site licenses
     - Ability to upgrade
   - Faculty training
   - Alternative teaching tools such as Digital tutors.com

3. **Spend enough time to imagine concretely the Design Technology Schools in which your group wants to work. This is an exercise in creative dreaming – of the kind of community you want to work toward…**
   - Software availability for students relative to the CGI industry
   - Up to date hardware with site licenses and the ability to upgrade hardware.
   - Various course offerings/career pathways:
     - Gaming
     - Architecture
     - Engineering
   - Company Sponsorships
Engineering Group

1. **Put yourself 5-10 years into the future. Visualize the Design Technology Schools you really want as if they exist now. What is life like?**
   - Imagines green-friendly schools that are self-sufficient (use rain water and solar power). The physical conditions of the learning environment such as natural lighting have a positive effect on student learning.
   - There is concern over the future of the Engineering and Drafting programs. There will be no more programs if things do not change. Community Colleges will help high school programs sustain themselves. No Child Left Behind and testing are killing drafting programs. More money is being spent on remedial programs and drafting is being cut.
   - A big change is going on in the world. Jobs are being sent out of the country.
   - How can we make student more globally marketable?
   - Start training students at a much younger age.
   - Students are graduating from high school with no skills. Many students are dropping out.
   - We need to get more serious with public education. Parents need to take an interest.

2. **List your accomplishment since 2005, with special reference to “What Future for Design Technology Schools.”**
   - No discussion on this subject.

3. **Spend enough time to imagine concretely the Design Technology Schools in which your group wants to work. This is an exercise in creative dreaming – of the kind of community you want to work toward…**
   - Schools should have a fitness center, laptops for each student, wireless connections, more use of internet communication – DE classes.
   - Students need to learn to do the task by hand before the computer.
   - There needs to be more designated subject credentials. We need professionals in the field to train kids.
   - Student group member stated he had no hand drafting in High School and is learning it at Citrus.

**SHORT AND LONG TERM GOALS:**

**Architectural Group**

Decisions in short and long term action steps:

**Short Term**
- Current Hardware and bigger working spaces
- Design Competitions similar to the AIA 1:2 competition Citrus is invited to each year.

**Long Term**
- More Respect for Community Colleges
- Design Studios similar to 4 and 5 year schools
**CGI Group**
Decisions in short and long term action steps:
  Short Term
  - Software availability for students
  - Up to date hardware with the ability to upgrade
  Long term
  - Various course offerings/career pathways
    - Gaming: Maya
    - Architecture: XSI
    - Engineering: CAD
  - Company sponsorships

**Engineering Group**
Decisions in short and long term action steps:
  Short Term
  - Upgrade current Hardware
  - Hand Drawing
  Long Term
  - Emphasis on Green Building

Dr. Fernandes thanked everyone for coming. The meeting was adjourned at 3:45pm.

The next CITRUS COLLEGE DRAFTING / ARCHITECTURE / CGI / ENGINEERING ADVISORY COMMITTEE meeting will be held in the Spring Semester ’09.
<table>
<thead>
<tr>
<th>Key Program Performance Indicator</th>
<th>01-02 Year 1</th>
<th>02-03 Year 2</th>
<th>03-04 Year 3</th>
<th>04-05 Year 4</th>
<th>05-06 Year 5</th>
<th>06-07 Year 6</th>
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<tbody>
<tr>
<td>Program Access</td>
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<td>7</td>
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<tr>
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<td>Program Resources</td>
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<td>Revenue-FTES x Reimbursement Rate</td>
<td>73,138</td>
<td>76,770</td>
<td>57,680</td>
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<td>82,153</td>
<td>56,653</td>
<td>63,060</td>
<td>73,095</td>
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<td>117,422</td>
<td>82,153</td>
<td>63,313</td>
<td>30,978</td>
<td>41,051</td>
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<td>Key Program Performance Indicator</td>
<td>01-02 Year 1</td>
<td>02-03 Year 2</td>
<td>03-04 Year 3</td>
<td>04-05 Year 4</td>
<td>05-06 Year 5</td>
<td>06-07 Year 6</td>
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<td>Supplies</td>
<td>16,433</td>
<td>840</td>
<td>973</td>
<td>5,826</td>
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<td>960</td>
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**Program Efficiency**

<table>
<thead>
<tr>
<th>Productivity – WSCH/FTEF (525=good)</th>
<th>182.13</th>
<th>225.09</th>
<th>242.18</th>
<th>234.14</th>
<th>221.19</th>
<th>111.90</th>
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<tbody>
<tr>
<td>Average Class Size (R. Fernandes’ classes Scheduled concurrently With drafting classes)</td>
<td>9.5</td>
<td>11.31</td>
<td>12.7</td>
<td>11.7</td>
<td>11.00</td>
<td>5.87</td>
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<tr>
<td>Fill Rate at Census</td>
<td>57%</td>
<td>58%</td>
<td>89%</td>
<td>71%</td>
<td>71%</td>
<td>40%</td>
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<tr>
<td>FTES per FTEF</td>
<td>6.1</td>
<td>7.5</td>
<td>8.0</td>
<td>7.7</td>
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<td>Cost per FTES</td>
<td>6,969</td>
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<td>2,056</td>
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<td>Cost per Major</td>
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**Program Success**

<table>
<thead>
<tr>
<th>Course Retention (D or better)</th>
<th>84%</th>
<th>76%</th>
<th>77%</th>
<th>78%</th>
<th>73%</th>
<th>82%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Course Success – Any Course (C or better)</td>
<td>79%</td>
<td>73%</td>
<td>69%</td>
<td>75%</td>
<td>71%</td>
<td>80%</td>
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<tr>
<td>Course Success – Next Course (C or better)</td>
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<tr>
<td>Course Success – Advanced Course (C or better)</td>
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<td>Major Persistence</td>
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<td>Degrees Awarded</td>
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<td>N/A</td>
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<tr>
<td>Certificates Awarded</td>
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<td>Skills Awards</td>
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<td>Student Satisfaction*</td>
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<tr>
<td>Employment Rate*</td>
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<tr>
<td>Employment Retention*</td>
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<tr>
<td>Employer Satisfaction*</td>
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*Vocational Programs Only
### Key Performance Indicator

#### Student Demographic Data

<table>
<thead>
<tr>
<th>Key Performance Indicator</th>
<th>01-02 Year 1</th>
<th>02-03 Year 2</th>
<th>03-04 Year 3</th>
<th>04-05 Year 4</th>
<th>05-06 Year 5</th>
<th>06-07 Year 6</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td>Female</td>
<td>83 (30%)</td>
<td>44 (18%)</td>
<td>20 (12%)</td>
<td>25 (16%)</td>
<td>13 (14%)</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>Male</td>
<td>190 (70%)</td>
<td>203 (82%)</td>
<td>143 (88%)</td>
<td>133 (84%)</td>
<td>80 (86%)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>&lt; 17</td>
<td>2 (1%)</td>
<td>2 (1%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>17 - 19</td>
<td>65 (24%)</td>
<td>69 (28%)</td>
<td>51 (31%)</td>
<td>61 (39%)</td>
<td>23 (25%)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>20 - 24</td>
<td>67 (25%)</td>
<td>53 (21%)</td>
<td>66 (40%)</td>
<td>57 (36%)</td>
<td>38 (41%)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>25 - 29</td>
<td>35 (13%)</td>
<td>36 (15%)</td>
<td>16 (10%)</td>
<td>16 (10%)</td>
<td>18 (19%)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>30 - 39</td>
<td>51 (19%)</td>
<td>40 (16%)</td>
<td>14 (9%)</td>
<td>9 (6%)</td>
<td>7 (8%)</td>
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<tr>
<td><strong>Age</strong></td>
<td>40 - 49</td>
<td>38 (14%)</td>
<td>22 (9%)</td>
<td>9 (6%)</td>
<td>7 (4%)</td>
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<td><strong>Age</strong></td>
<td>50 - 59</td>
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<td>2 (2%)</td>
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<td><strong>Age</strong></td>
<td>60 - 69</td>
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<td><strong>Ethnicity</strong></td>
<td>Hispanic</td>
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<td>87 (35%)</td>
<td>57 (35%)</td>
<td>58 (37%)</td>
<td>48 (52%)</td>
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<tr>
<td><strong>Ethnicity</strong></td>
<td>Caucasian</td>
<td>96 (35%)</td>
<td>96 (39%)</td>
<td>56 (34%)</td>
<td>60 (38%)</td>
<td>15 (16%)</td>
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<tr>
<td><strong>Ethnicity</strong></td>
<td>Black</td>
<td>6 (2%)</td>
<td>8 (3%)</td>
<td>7 (4%)</td>
<td>4 (3%)</td>
<td>4 (4%)</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td>Asian</td>
<td>28 (10%)</td>
<td>27 (11%)</td>
<td>26 (16%)</td>
<td>13 (8%)</td>
<td>9 (10%)</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
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<td>8 (3%)</td>
<td>3 (2%)</td>
<td>8 (5%)</td>
<td>6 (6%)</td>
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<tr>
<td><strong>Ethnicity</strong></td>
<td>Native American</td>
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<td>3 (1%)</td>
<td>3 (2%)</td>
<td>1 (1%)      2 (2%)</td>
<td>3 (3%)</td>
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<td>1 (0%)</td>
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<td>0</td>
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<td><strong>Ethnicity</strong></td>
<td>Other Non White</td>
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<td>3 (1%)</td>
<td>1 (1%)</td>
<td>7 (4%)</td>
<td>1 (1%)</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td>Unknown</td>
<td>19 (7%)</td>
<td>14 (6%)</td>
<td>10 (6%)</td>
<td>7 (4%)</td>
<td>8 (9%)</td>
</tr>
<tr>
<td><strong>ED Goal</strong></td>
<td>AA or AS Degree</td>
<td>41 (15%)</td>
<td>22 (9%)</td>
<td>16 (10%)</td>
<td>14 (9%)</td>
<td>5 (5%)</td>
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<td><strong>ED Goal</strong></td>
<td>Degree &amp; Transfer</td>
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<td>70 (28%)</td>
<td>74 (45%)</td>
<td>71 (45%)</td>
<td>36 (39%)</td>
</tr>
<tr>
<td><strong>ED Goal</strong></td>
<td>Transfer No Deg</td>
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<td>47 (19%)</td>
<td>36 (22%)</td>
<td>32 (20%)</td>
<td>22 (24%)</td>
</tr>
<tr>
<td><strong>ED Goal</strong></td>
<td>Certificate</td>
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<td>28 (11%)</td>
<td>11 (7%)</td>
<td>13 (8%)</td>
<td>14 (15%)</td>
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<tr>
<td><strong>ED Goal</strong></td>
<td>Job Skills</td>
<td>46 (17%)</td>
<td>38 (15%)</td>
<td>11 (7%)</td>
<td>11 (7%)</td>
<td>8 (9%)</td>
</tr>
<tr>
<td><strong>ED Goal</strong></td>
<td>Personal</td>
<td>36 (13%)</td>
<td>33 (13%)</td>
<td>13 (8%)</td>
<td>9 (6%)</td>
<td>4 (4%)</td>
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<tr>
<td><strong>ED Goal</strong></td>
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<td>7 (3%)</td>
<td>9 (4%)</td>
<td>2 (1%)</td>
<td>8 (5%)</td>
<td>4 (4%)</td>
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