PRAIRIE VIEW A&M UNIVERSITY

COLLEGE OF ENGINEERING

QUALITY ENHANCEMENT PLAN: 2004 - 2008

(Updated on July 29, 2003)

TABLE OF CONTENTS

i

Quality Enhancement Plan for the College of Engineering

Part One: Vision and Mission

IA. Vision of the College of Engineering

By the year 2006, the College of Engineering will be characterized as having sustained an infrastructure that produces graduates with the highest level of academic preparation, ethical and professional standards. The College will maintain a collaborative environment whereby its graduates will design engineering, technology, and computer processes and systems that enhance the quality of life in the national and global society.

The College of Engineering will continue to meet and exceed accreditation standards. The College will have a reputation of meeting and exceeding the needs of our internal and external clients. Because of the global consequences of many engineering endeavors and the continually changing technological climate, particularly as it relates to quality of life, the College of Engineering envisions implementation of biomedical engineering as an added discipline.

Research will continue to be a vital and growing part of the undergraduate experience and as a consequence, provide a critical mass for input into the masters programs. Faculty research will be significantly increased in support of both the masters and Ph.D. programs.

IB. Mission of the College of Engineering

The modern mission of the College of Engineering, at the dawn of the new millennium, is to sustain an infrastructure that will attract and maintain a world-class faculty, which can produce graduates with the highest level of professional standards. These graduates will be prepared for a career of life-long learning that will result in leaders, productive workers, innovators and entrepreneurs who will positively impact the increasingly multi-disciplinary and diverse national economy. The College serves as a value added partner within the University to meet the challenge to excellence in education and research in engineering and to service and relevance to regional, national, and global communities.

This mission is accomplished through the following six goals:

1. Strive for excellence in engineering education through the dissemination and interpretation of knowledge through the educational programs.
2. Recruit and retain students who have demonstrated a capacity to excel in an environment that integrates advanced information technology with creativity, critical thinking, and problem solving.
3. Recruit and retain a cadre of world-class faculty effective in every endeavor of student-faculty interaction and committed to maintaining an academic standard that will ensure the students are highly competitive for graduate or professional

1

school or for employment in the private or public sectors.

4. Promote scholarly activities through the continual development of our research centers and other collaborations and further enhancing our incorporation of undergraduate and graduate research activities.

5. Continue a strong external relations component that cultivates and integrates our corporate and alumni constituents into a partnership with the College.

6. Maintain the appropriate infrastructure and support services necessary to provide an atmosphere conducive to learning.

IC. Relationship of the College of Engineering's Mission to the University's Mission

The mission of the College of Engineering directly supports the mission of the University.

Part Two: Assessment of Progress

Tables summarizing the assessment progress of each department in the College of Engineering are shown in the respective departments' reports.

Part Three: Azimuth Crosswalk

Azimuth #1 – Foster Collaboration Among Systems Institutions

A-1-1 Strengths: Strengths that the College possesses that can foster attainment of the ideals expressed in Azimuth #1

1. The Electrical Engineering Department has two research centers: the NASA Center for Applied Radiation Research and the Center of Excellence for Communication Systems Technology Research.

2. The Electrical Engineering Department has two Endowed Positions, one in Communication/Signal Processing and the other in Microelectronics.

3. The Electrical Engineering Department has both M.S. and Ph.D. graduate programs.

4. Strategically valuable position as an HBCU   Increasingly, funding agencies are looking for teaming as part of the awarded criteria. Diversity is an important aspect for a team to be competitive. As an HBCU that serves a predominately African-American student body and as a College with an ethnically diverse composition, we are strategically well placed to be a value-added member of a collaborative research proposal team.

2

5. The Computer Science Department is collaborating with Texas A&M University at College Station in developing research grants for funding to enhance department capabilities in research and increase the funding level. A Software Engineering Initiative (SEI) is already in place in collaboration with Texas A&M- Kingsville.

6. The Civil Engineering Department has the capability and potential to be partners in collaborative research projects in environmental, structural and transportation engineering specialty areas.

7. The Civil Engineering Department has the capability and potential to collaborate with system institutions to foster K-12 education in outreach activities to increase enrollment in higher education.

8. The College of Engineering has an existing collaboration with Texas A&M University with a memorandum of agreement for a joint Ph.D. program with the College of Engineering at Texas A&M University.

9. The Chemical Engineering Department faculty have two active grants—one with Texas A&M University (TAMU) and another with TAMU and Texas A&M University at Kingsville. This year, three new projects were proposed, one in collaboration with TAMU, and two others in collaboration with The University of Texas at Austin (UT), the University of Tennessee at Chattanooga, and the University of Florida at Gainesville. At least one other collaborative proposal with TAMU is currently being developed.

10. The College of Engineering is a member of TEES and is currently working with TEES to write a proposal to the national Science Foundation.

A-1-2 – Weaknesses which can lessen the chances of contributing to the realization of the outcomes expected in the Azimuth

1. Under-equipped research laboratories. Although improvements have been made in our laboratories, there is much that is missing for the Departments to have strong programs of research in general. There is a lack of key research equipment to be strong partners in collaborative proposals. It is important for our laboratories to be well equipped so that our students can be better trained and benefit fully from their involvement in collaborative research projects.

2. Heavy teaching loads in some departments.

3. Low graduate student enrollment. More support for graduate assistantships is needed.

4. Not attracting high quality students.

5. Lack of collaboration events with other system institutions.

6. Members of system institutions are not aware of potential collaborative efforts.

A-1-3 – Actions that the College of Engineering and/ or the University can take to remediate weaknesses cited above.

1. Seek corporate sponsors for establishment of a sponsored or endowed laboratory. Continue to develop proposals to external funding agencies to support new equipment for laboratories. Identify industrial partners to donate/fund purchase of specialized equipment

2. Reduce teaching loads to provide more release time for research. Hire additional faculty.

3. Initiate faculty exchanges and foster collaboration among faculty members in the TAMUS.

4. Submit grant proposals for more student scholarships.

5. Submit proposals for internal and external funds.

6. Support faculty/staff travel for collaboration with researchers in other institutions.

Azimuth #2 – Provide Educational Access and Excellence and Nurture Educational Success

A-2-1 – Strengths that the College possesses that can foster attainment of the ideals expressed in the above azimuth.

1. Programs are ABET accredited

2. High enrollment of underrepresented groups.

3. Expertise and knowledge to teach students to prepare them for careers in disciplines in engineering, technology and computer science.

4. The existence of the University College to advise and mentor freshmen.

5. The Engineering and Science Concepts Institute (ESCI) is an eight-week freshman summer program that introduces recent high school graduates to the profession of engineering. The Science Mathematics, Engineering and Technology (SMET) enhancement program is open to recent high school graduates who are entering college for the first time. Participants

4

complete an intensive eight-week summer program. The MITE summer program introduces engineering to high school students.

6. Tutorials are provided to freshmen students through a grant from the Texas Higher Education Coordinating Board.

7. All ABET accredited programs have begun the transition to outcomes-based instruction. All ABET accredited programs have undertaken reform to teach the outcomes as specified by the ABET 2000 accreditation criteria, which are designed to promote continuous improvement in engineering programs.

8. Scholarships The departments as well as the College use corporate donated scholarship and development funds to provide students with support based on academic (promoting excellence) and need (promoting access) which is valuable in nurturing educational success.

9. College offers four Master Degrees (Computer Science, Computer Information Systems, Electrical and General Engineering). A new Ph.D. Degree in electrical engineering will commence in the fall 2003 semester.

10. The Computer Science Department offers courses via distance learning.

A-2-2 Weaknesses that could lessen the College's chances of contributing to the relation of the outcomes expected in the azimuth.

1. Need to implement a Master Science Degree in Mechanical Engineering.

2. Inability to attract matching funds for endowed chair in Computer Science.

3. Lack of publicity. Web presence is low and/or out of date.

4. Lack of teaching assistants and graders.

5. Non-availability of sufficient funds to provide tutorials for students struggling in courses.

6. Minimal partnership with community colleges and high schools. Lack of personnel to coordinate outreach activities for high schools and community colleges.

7. Enrollment trends.

8. Crowded laboratories.

5

9. Lack of funds to invite distinguished speakers on a regular basis.

A-2-3 Actions that the College and/or University can take to remediate weaknesses cited above.

1. Articulation agreements with Community colleges.

2. Increase high school conferences.

3. Participate in college career fairs.

4. Allocation of funds for scholarships for students and funds for outreach and recruitment activities.

5. Obtain funds for tutorials and obtain scholarship money for deserving and needy students.

6. Effective marketing effort at the University level including commitment to support websites University-wide to the department level.

7. Seek external funds through proposal for inviting distinguished speakers.

8. University can provide funding for support in aid to instruction in the form of teaching assistants and graders.

9. Work with the university in capital campaign program.

10. Plan to establish a Master Science in Mechanical Engineering Degree by Fall 2004.

Azimuth #3 – Increase the value of our Academic Programs

A-3-1 – Strengths the College possesses that can foster attainment of the ideals expressed in the above azimuth.

1. Two new Masters degree programs in Computer Science and Computer Information Systems.

2. Mechanical Engineering produces many capable mechanical engineers in undergraduate as well as graduate level.

3. ABET accredited programs.

4. Faculty committed to teaching effectiveness.

6

5. FE Exam pass rate.

6. Increased faculty involvement in research.

7. Increased number of undergraduates pursue advanced degrees.

8. High job placement rate of electrical engineering graduates.

9. Faculty authoring books and obtaining patents.

10. Students' exposure to industry practice through Senior Design Projects.

11. Curriculum is reviewed and revised to meet the requirements of accreditation.

12. Students are involved in research work and exposed to hands-on experience required by industry.

13. Civil Engineering graduates are adequately prepared for careers in environmental, structural, transportation and water resources specialties.

A-3-2 – Weaknesses the College possesses that could lessen its chances of contributing to the realization of the outcomes expected in the azimuth.

1. Did not produce as many graduates as projected.

2. Lack of Computer Science summer outreach program.

3. Lack of funds for scholarships.

4. Lack of external funding for research and scholarly activities.

5. Decreased enrollment numbers.

6. Lack of incentives and recognition for the faculty to pursue outreach activities and community services.

7. Low enrollment of Hispanic students.

8. Lack of incentives for community college students to transfer to engineering programs.

9. Number of students choosing to take the FE Exam is small. The number of students ready to take the FE exam needs to be higher.

10. High enrollment of students with academic deficiencies.

11. High faculty workload.

A-3-3 – Actions that the College and/or the University can take to remediate the weaknesses cited above.

1. The College can participate in an FE readiness enhancement program.

2. The University could establish a program to provide support for those faculty members who are committing to the effort to develop research programs.

3. Promote the enrollment of Hispanic students.

4. Provide incentives for community college students to transfer to the College of Engineering.

5. Increase the abilities to attract funding for research by submitting more research proposals to the funding agencies.

6. Gradual increase of academic standards.

7. Maintain faculty-teaching loads at national standards.

8. Recruit more students to the engineering programs.

Azimuth #4 – Increase the Value of our Scholarship and Research.

A-4-1 Strengths the College possesses that can foster attainment of the ideals expressed in the above azimuth.

1. Have significant external funded research programs.

2. Qualified faculty.

3. New master's degrees in electrical engineering, computer science and computer information systems as well as a Ph.D. program.

4. Faculty members possess a wide range of professional and academic skills.

5. The joint Ph.D. program with Texas A&M University has produced doctorates in Engineering.

8

6. Hosting workshops.

7. Publications in engineering journals.

8. Faculty authored engineering textbooks.

9. Faculty active in professional societies and trade organizations promoting professional development.

A-4-2 – Weaknesses the College possesses that could lessen its chances of contributing to the realization of the outcomes expected in the azimuth.

1. Limited journals and publications in university library.

2. No release time for scholarly activity.

3. Electrical Engineering has not done any technology transfer.

4. Faculty sabbaticals are not available for engineering faculty.

5. Inadequate funds to attend conferences and developmental activities.

6. Not enough graduate students to work on research projects in Civil Engineering.

7. Few students are well prepared for research activities.

8. Lack of incentives and recognition for the faculty to pursue outreach activities and community service.

A-4-3 – Actions that the College and/or University can take to remediate any weaknesses cited above.

1. Support faculty's participating in grant announcement conferences and workshops to obtain research opportunity information.

2. Raise admission standards.

3. Actively submit grant proposals.

4. Increase more collaboration with other institutions and state agencies.

5. Graduate research assistantships and funds for teaching assistant support.

6. Funds for attending conferences and developmental activities.

9

7. Encourage faculty members with patents to pursue technology transfer to industry.

8. Provide funds to faculty members to go on sabbaticals.

9. Establish a program to provide support for those faculty members who are committing the effort to develop research programs.

10. Faculty training to write proposals.

11. Adequate release time for faculty

12. Provide incentive to faculty involved in scholarship and research.

Azimuth #5 – Serve Texas and Beyond: Anticipate and Solve Critical Problems.

A-5-1 – Strengths that the College possesses that can foster attainment of the ideals expressed in the above azimuth.

1. Faculty current in technological developments.

2. Departments are highly accessible to students across a wide range of backgrounds. The Department is highly accessible to students across a wide range of backgrounds—academic, ethnic, economic, and otherwise. This is an area of strength in addressing the changing demographics in Texas and the increasing need to educate population sectors that are growing rapidly.

3. A faculty member serves on the Waller Economic Development Council.

4. A faculty member is the Director of Small Business Mentoring Program, funded by EPA and DARPA.

5. Faculty participates in the Science and Engineering Alliance.

6. Departments have Industrial Advisory Boards.

7. Create the pipeline of graduates for workforce in Texas and the nation.

8. Faculty serves on the advisory committee of the Railroad Commission of Texas Alternative Fuels Research and Education Division (AFRED).

A-5-2 – Weaknesses the College possesses that could lessen its chances of contributing to the realization of the outcomes expected in the azimuth.

10

1. Lack of scholarships to attract students.

2. Lack of summer computer/math camps for high school students for computer science students.

3. Lack of partnership with surrounding communities.

4. The College is relatively unknown.

5. Inadequate exposure to regional and global issues.

6. Organizational structure in the university to facilitate service to the community.

A-5-3 – Actions that the College and/or the University can take to remediate any weaknesses cited above.

1. Improve recruitment.

2. Promote participation in competitions.

3. Raise awareness on social responsibility among faculty and students.

4. Marketing component needs to be added at the Department, College and University levels with integration of and coordination between levels.

5. Funding is needed to increase the research capabilities. The State of Texas ARP/ATP program serves this purpose and the Department has pursued funding through this program, with prior success. NSF offers funding programs for this purpose. The Department should stay committed proposing support from such external agencies. The University can develop programs to develop capabilities in key departments to attain the readiness expressed in this azimuth.

6. Form and enhance partnerships with industry, school districts and surrounding communities.

7. Cultivate partnerships with community colleges to achieve greater transfer rates and completion rates.

Azimuth #6 – Enhance Acquisition of Resources and Maximize their Effective Use.

A-6-1 – Strengths the College possesses that can foster attainment of the ideals expressed in the above azimuth.

1. Equipment access fees in each department provide a steady source of

11

funds for laboratory improvement, upgrade and maintenance.

2. The College has OCR – Texas Commitment to PVAMU funds to support the acquisition of resources.

3. Several departments have some consistent support through corporate donations of scholarship and development funds.

4. Active and effective Industrial Advisory Councils.

5. Good opportunities for research funding in environmental areas.

6. Proper utilization of available funds.

7. Capability of distance learning operation.

8. Most departments have made significant efforts to receive external funded research projects, funds for scholarships for undergraduate students and general funds for faculty development, faculty/students travel and general operations.

9. Great potential for acquisition of funding from highways and transportation area research projects.

A-6-2- Weaknesses which the College possesses that could lessen its chances of contributing to the realization of the outcomes expected in the azimuth.

1. The College and the University cannot charge large tuition fees because a majority of our students cannot afford large fees.

2. Low budget.

3. Limited number of courses offered over distance learning.

4. The external funding is an unstable resource. While levels of corporate support have been steady, they have not grown substantially.

5. Need for a faculty with transportation engineering expertise.

A-6-3 – Action that the College and/or the University can take to remediate weaknesses cited above.

1. Inform alumni, parents and the Texas Legislature about the activities of the College through a newsletter.

2. Additional efforts can be made at the Department, College, and University levels to expand solicitations to bring new potential

sponsors on board with contributions. This can be done through general solicitations as well as specific, project or activity related proposals to potential corporate supporters for funding.

3. Establish PV Alumni network.

4. Encourage faculty to increase industrial partnership and actively seek funding opportunities.

5. Provide release time for scholarly activities.

6. Consistently invest some resource for fund raising for faculty participating in conferences and workshops.

7. Appoint faculty with transportation engineering expertise.

Part IV. OBJECTIVES BY PRIORITY GOALS AND STRATEGIES, COLLEGE OF ENGINEERING 2004-2008

Goal Area by Objectives	Strategies
1. Participation (U/G enrollment, outreach scholarships, etc.)	
1.1 (a) By Fall 2005, increase the enrollment of College of Engineering from 1043 in Fall 2002 to 1205. The plan includes the increase of the enrollment of Chemical Engineering Department from 81 in Fall 2002 to 100, Civil Engineering Department from 49 in Fall 2002 to 65, Computer Science Department from 152 in Fall 2002 to 210, Electrical Engineering Department from 273 in Fall 2002 to 330, Engineering Technology Department from 326 in Fall 2002 to 350, and Mechanical Engineering Department from 124 in Fall 2002 to 150. (b) By Fall 2008, increase the enrollment of College of Engineering to 1605. The plan includes the increase of the enrollment of Chemical Engineering Department to 160, Civil Engineering Department to 85, Computer Science Department to 300, Electrical Engineering Department to 460, Engineering Technology Department to 400, and Mechanical Engineering Department to 200.	1.1 a. Aggressive marketing by the following means: development of excellent websites, advertisement in national papers, gifts and souvenirs to prospective students, excellent promotional materials, request for the attention of the President of the University. b. Enhancement of Pre-College Programs: such as MITE, STL High School's AP duel-credits with PVAMU, academic camps, Engineering Prep Academy, Saturday Prep Academy, and workshops for high school counselors. c. Participation of high school events: such as Science fairs, College Days/Nights, Career days, Bus students to the College, Preparing Models-pictures, Experiments for high school students, etc. d. College of Engineering Open House for high schools, middle schools, elementary schools, and for general freshmen at Prairie View A&M.

1. Participation (U/G enrollment, outreach scholarships, etc.)

1.1 (continued from the previous page - Increase the enrollment of College of Engineering from 1043 in Fall 2002 to 1605 in Fall 2008.)

e. Collaboration with the University College such as providing faculty to give guest seminars to the students, and to advise the freshmen, and inviting UC counselors to meet with College administrators and faculty.

f. Enhancement of transfer student program by using dual credit arrangement with community colleges, providing visiting professors to community colleges, developing more targeted and effective articulation agreements, providing more transfer student scholarship, etc.

g. Other strategies may include: partnership with other colleges for recruiting events, and use of GEM and SAT score database for targeted recruiting.

1.2 (a) By Fall 2005, increase the College of Engineering faculty/staff/students to high schools/community colleges from 30 visits to 50 visits per year.

(b) By Fall 2008, increase the College of Engineering faculty/staff/students to high schools/community colleges from 30 visits to 100 visits per year.

1.2 a. Faculty/staff/students periodically visit several target high schools/community colleges for recruitment, participation in science projects, providing guest lectures, etc.

b. Create a schedule of visits to specific high schools and community colleges.

Goal Area by Objectives	Strategies
2. Success (U/G SCH production, U/G degree production)	
2.1 (a) By Fall 2005, maintain or exceed the passing rate (65%) of Fundamentals of Engineering (FE) Exam required by the State of Texas.	2.1 a. Continue to offer a FE review course for junior/senior students.
(b) By Fall 2008, exceed the passing rate of Fundamentals of Engineering (FE) Exam required by the State of Texas to 75%.	b. Improve the student's understanding of the fundamental subjects (mostly sophomore and junior classes) by providing tutors.
2.2 (a) By Fall 2005, increase graduates of the College of Engineering from 124 in fall 2002 to 140.	2.2 a. Provide effective tutoring service to the students, especially freshmen.
(b) By Fall 2008, increase graduates of the College of Engineering to 180.	b. Provide designated faculty members to work closely with the University College to assist the students in the first year.
	c. Involve the student organizations in the retention efforts.

Goal Area by Objectives	Strategies
3. Excellence (program accreditation and Fundamentals of Engineering Exam passing rate) 3.1 (a) By Fall 2005, maintain the ABET accreditation for all seven accredited programs in the College of Engineering. (b) By Fall 2008, maintain the ABET accreditation for all seven accredited programs in the College of Engineering. 3.2 (a) By Fall 2005, develop regionally recognized graduate programs. (b) By Fall 2008, develop nationally recognized graduate programs, especially Ph.D. program in Electrical Engineering.	3.1.a. Continue to update laboratory facilities that support for the engineering/computer science/engineering technology curricula. b. Assess the currency of the curricula by periodic internal review and external review. c. Assess the student's learning by evaluating student's work against ABET (a) through (k) criteria. Each subject taught in the accredited curricula will be required to complete a course binder for assessment. d. Continue to maintain the quality of faculty/staff in the programs. e. Assist in student's development by supporting for student's professional activities. 3.2.a. Attract more qualified students to the graduate program. b. Have faculty serve on state, national, and international committees and panels.

Goal Area by Objectives	Strategies
4. Research (grants and research/scholarly/creative work, etc.)	
4.1 (a) By 2005 academic year, increase external research funding from $3.6M in 2001 academic year to $5 M for the College of Engineering.	4.1.a. **Support** for faculty's participating in "grant announcement" conferences/workshops to obtain first-hand information.
(b) By 2008 academic year, increase external research funding to $7 M for the College of Engineering.	b. **Support** for faculty/staff's travel for collaboration with researchers in other institutions, industry, or government agencies.
	c. **Support** for faculty's research work by sharing departmental facilities for dual-use: teaching and research.
	d. Employ new endowed chair professors.
4.2 (a) By Fall 2005, increase the publications in the College of Engineering to, on average, two technical papers per three tenure-track and tenured faculty members each year.	4.2.a. **Support** for faculty/students' attending technical conferences.
(b) By Fall 2008, increase the publications in the College of Engineering to, on average, one technical paper per each tenure-track and tenured faculty member each year.	b. Encourage faculty's technical publications by including it in the faculty's evaluation plans.
	c. **Support** for faculty/students' other scholarly activities on-campus or off-campus.

18

Goal Area by Objectives	Strategies
5. Service/Outreach (K-12 initiatives, summer enrichment programs)	
5.1 (a) By Fall 2005, the College will offer 2 continuing education courses per year.	5.1.a. Identify courses that are of interest to the community and engineering/computer science/engineering technology professional and offer the courses.
(b) By Fall 2008, the College will offer 6 continuing education courses per year.	b. Employ an administrative assistant to coordinate the short courses.
5.2 (a) By Fall 2005, the College will have entered into partnerships with 5 high schools with respect to adopting engineering/computer science/engineering technology into their curricula.	5.2.a. Identify high schools that sent a significant number of students to the College of Engineering and enter into partnership with them.
	b. Make special effort to include the communities close to Prairie View A&M University in collaborated projects, such as the Infinity Project – Engineering in High Schools.
(b) By Fall 2008, the College will have entered into partnerships with 20 high schools with respect to adopting engineering/computer science/engineering technology into their curricula.	c. Provide teacher training during the Summer months.
	d. Faculty/staff/students periodically visit specific target high schools to participate in science projects, providing guest lectures, etc.

19

Goal Area by Objectives	Strategies
6. Engagement (outside class advising, mentoring, sharing, motivating, and nurturing students, colleagues, other served, etc.)	6.1
6.1 (a) By Fall 2005, academic advising of majors and minors will have achieved a 90% satisfaction rating undergraduate and graduate students in the College.	a. Establish structured tutoring and mentoring programs.
(b) By Fall 2008, academic advising of majors and minors will have achieved a 99% satisfaction rating undergraduate and graduate students in the College.	b. Discuss the issues of advising, mentoring, sharing, motivating, and nurturing students in faculty meetings.
6.2 (a) By Fall 2005, academic support (extra class support) for students taking undergraduate courses in the College will have bi-weekly tutorials/help sessions organized by faculty and taught by both faculty and advanced students.	c. Monitor the student's satisfactory level by conducting student opinion survey (SOS).
(b) By Fall 2008, academic support (extra class support) for students taking undergraduate courses in the College will have added on-line tutorials as a supplement to face-to-face bi-weekly tutorials organized by faculty.	d. Involve the student organizations: such as Tau-Beta-Pi, and others in the mentoring process.
	6.2
	a. Appoint a coordinator to oversee the overall tutoring/help session efforts in the College.
	b. Appoint a coordinator to oversee web-assisted tutorial tasks in the College.
	c. Employ student assistants for tutoring/help sessions.

Goal Area by Objectives	Strategies
7. Technology (access, use, etc.)	
7.1 By Fall 2005 and 2008, the College of Engineering faculty/staff/students should have complete access and use of all required computer facilities and software.	7.1.a. Provide sufficient modern computers in the College as well as the Departmental Computer Labs. b. Provide curriculum-required software in the computer labs. c. Provide lab technicians/assistants to help users in the Compute Labs.
7.2 By Fall 2005 and 2008, the College of Engineering faculty/staff/students should have complete access and use of all required laboratory facilities.	7.2.a. Provide required laboratory facilities to the engineering/computer science/engineering technology programs to support for the curricula. b. Provide sufficient lab technicians/assistants to help users in the laboratories.

Goal Area by Objectives	Strategies
8. Planning (organization, operating procedures, scheduling, budgeting, etc.)	8.1 & 8.2
	a. Recruit more graduate students to the College by providing assistantships, especially the new graduate programs.
8.1. By Fall 2005, expand the academic programs that include the establishment of Master of Science graduate program in Mechanical Engineering.	b. Increase external funded research projects to provide research opportunities and financial support for the graduate students. (as a part of goal 4.1, By Fall 2009, increase the College of Engineering external funding from to $7,000,000.)
8.2. By Fall 2008, enhance the College's graduate programs that include to sponsor at least 40 graduate assistantships to its graduate students per year.	c. Employ new faculty members for the graduate program.
	(strategy 8.3 is the same as strategy 4.1 due to its nature of research development)
8.3 (a) By Fall 2005, expand the research programs that include the establishment of a new research center.	8.3.a. Support for faculty's participating in "grant announcement" conferences/workshops to obtain first-hand information.
(b) By Fall 2008, expand the research programs that include the establishment of another new research center.	b. Support for faculty/staff's travel for collaboration with researchers in other institutions, industry, or government agencies.
	c. Support for faculty's research work by sharing departmental facilities for dual-use: teaching and research.
	d. Employ new endowed chair professors.

Part Five: Strategies by New Funding Requirements
(Projected New Funding Requirements include the planned budget requirements of the Dean's Office and the planned budget requirements for the six departments in the College of Engineering)

Strategies by Priority Goals	Projected New Funding Requirements			
	2004-05	2005-06	2006-07	2007-08
1.1 a. Aggressive marketing by the following means: development of excellent websites, advertisement in national papers, gifts and souvenirs to prospective students, excellent promotional materials, request for the attention of the President of the University.	$60,000 (ad's, web-development, marketing materials)	$60,000 (ad's, web-development, marketing materials)	$60,000 (ad's, web-development, marketing materials)	$60,000 (ad's, web-development, marketing materials)
1.1 b. Enhancement of bridging program, such as ESCI; and Pre-College Programs: such as MITE, STI, High School's AP duel-credits with PVAMU, academic camps, Engineering Prep Academy, Saturday Prep Academy, and workshops for high school counselors.	$200,000 (scholarships for ESCI, MITE, STI, etc.)	$300,000 (scholarships for ESCI, MITE, STI, etc.)	$400,000 (scholarships for ESCI, MITE, STI, etc.)	$500,000 (scholarships for ESCI, MITE, STI, etc.)
1.1.c. Participation of high school events: such as Science fairs, College Days/Nights, Career days, Bus students to the College, Preparing Models-pictures, Experiments for high school students, etc.	$10,000 (travel & supplies)	$10,000 (travel & supplies)	$10,000 (travel & supplies)	$10,000 (travel & supplies)
1.1.d. College of Engineering Open House for high schools, middle schools, elementary schools, and for general freshmen at Prairie View A&M.	$10,000 (events cost)	$10,000 (events cost)	$10,000 (events cost)	$10,000 (events cost)
1.1.e. Collaboration with the University College such as providing faculty to give guest seminars to the students, and to advise the freshmen, and inviting UC counselors to meet with College administrators and faculty.	0	0	0	0
1.1.f. Enhancement of transfer student program by using dual credit	$100,000	$150,000	$200,000	$250,000

Task				
arrangement with community colleges, providing visiting professors to community colleges, developing more targeted and effective articulation agreements, providing more transfer student scholarship, etc.	(scholarship for transfer students)	(scholarship for transfer students)	(scholarship for transfer students)	(scholarship for transfer students)
1.1.g. Other strategies may include: partnership with other colleges for recruiting events, and use of GEM and SAT score database for targeted recruiting.	$10,000 (events, data cost)	$10,000 (events, data cost)	$15,000 (events, data cost)	$20,000 (events, data cost)
1.2.a. Faculty/staff/students periodically visit several target high schools/community colleges for recruitment, participation in science projects, providing guest lectures, etc.	$20,000 (travel & supplies)	$20,000 (travel & supplies)	$20,000 (travel & supplies)	$20,000 (travel & supplies)
1.2.b Create a schedule of visits to specific high schools and community colleges.	0	0	0	0
2.1.a. Continue to offer a FE review course for junior/senior students.	$5,000 (review materials)	$5,000 (review materials)	$5,000 (review materials)	$5,000 (review materials)
2.1.b. Improve the student's understanding of the fundamental subjects (mostly sophomore and junior classes) by providing tutors.	$20,000 (hourly student asst.)	$30,000 (hourly student asst.)	$30,000 (hourly student asst.)	$40,000 (hourly student asst.)
2.2.a. Provide effective tutoring service to the students, especially freshmen.	$30,000 (hourly student asst.)	$40,000 (hourly student asst.)	$50,000 (hourly student asst.)	$60,000 (hourly student asst.)
2.2.b. Provide designated faculty members to work closely with the University College to assist the students in the first year.	0	0	0	0
2.2.c. Involve the student organizations in the retention efforts.	0	0	0	0
3.1.a. Continue to update laboratory facilities that support for the engineering/computer science/engineering technology curricula.	(including in 7.2.a)	(including in 7.2.a)	(including in 7.2.a)	(including in 7.2.a)
3.1.b. Assess the currency of the curricula by periodic internal review and external review.	$6,000 (travel, meals)	$6,000 (travel, meals)	$6,000 (travel, meals)	$6,000 (travel, meals)
3.1.c. Assess the student's learning by evaluating student's work against ABET criteria. Each subject taught in the accredited	0	0	0	0

Action Item				
curricula will be required to complete a course binder for assessment.				
3.1.d. Continue to maintain the quality of faculty/staff in the programs.	(including in 4.1.a., 4.1.b., and 4.2.a.)	(including in 4.1.a., 4.1.b., and 4.2.a.)	(including in 4.1.a., 4.1.b., and 4.2.a.)	(including in 4.1.a., 4.1.b., and 4.2.a.)
3.1.e. Assist in student's development by supporting for student's professional activities.	$60,000 (student development)	$80,000 (student development)	$100,000 (student development)	$100,000 (student development)
3.2.a. Attract more qualified students to the graduate program.	(including in 8.1.b.)	(including in 8.1.b.)	(including in 8.1.b.)	(including in 8.1.b.)
3.2.b. Have faculty serve on state, national, and international committees and panels.	$10,000 (travel)	$10,000 (travel)	$10,000 (travel)	$10,000 (travel)
4.1.a. Support for faculty's participating in "grant announcement" conferences/workshops to obtain first-hand information.	$40,000 (travel)	$40,000 (travel)	$40,000 (travel)	$40,000 (travel)
4.1.b. Support for faculty/staff's travel for collaboration with researchers in other institutions, industry, or government agencies.	$20,000 (travel)	$20,000 (travel)	$20,000 (travel)	$20,000 (travel)
4.1.c. Support for faculty's research work by sharing departmental facilities for dual-use: teaching and research.	0	0	0	0
4.1.d. Employ new endowed chair professors.	$250,000 (endowment)	$250,000 (endowment)	$500,000 (endowment)	$500,000 (endowment)
4.2.a. Support for faculty/students' attending technical conferences.	$20,000 (travel)	$20,000 (travel)	$20,000 (travel)	$20,000 (travel)
4.2.b. Encourage faculty's technical publications by including it in the faculty's evaluation plans.	0	0	0	0
4.2.c. Support for faculty/students' other scholarly activities on-campus or off-campus.	$20,000 (event cost)	$20,000 (event cost)	$20,000 (event cost)	$20,000 (event cost)
5.1.a. Identify courses that are of interest to the community and engineering/computer science/engineering technology professional and offer the courses.	0	0	0	0
5.1.b. Employ an administrative assistant to coordinate the short	$30,000	$30,000	$30,000	$30,000

Task				
courses.	0	0	0	0
5.2.a. Identify high schools that sent a significant number of students to the College of Engineering and enter into partnership with them.	0	0	0	0
5.2.b. Make special effort to include the communities close to Prairie View A&M University in collaborated projects, such as the Infinity Project – Engineering in High Schools.	$100,000 (project cost)	$100,000 (project cost)	$100,000 (project cost)	$100,000 (project cost)
5.2.c. Provide teacher training during the Summer months.	$20,000 (faculty time)	$30,000 (faculty time)	$40,000 (faculty time)	$40,000 (faculty time)
5.2.d. Faculty/staff/students periodically visit specific target high schools to participate in science projects, providing guest lectures, etc.	(including in 1.1.c.)	(including in 1.1.c.)	(including in 1.1.c.)	(including in 1.1.c.)
6.1.a. Establish structured tutoring and mentoring programs.	(including in 2.a. and 3.2.b.)	(including in 2.a. and 3.2.b.)	(including in 2.a. and 3.2.b.)	(including in 2.a. and 3.2.b.)
6.1.b. Discuss the issues of advising, mentoring, sharing, motivating, and nurturing students in faculty meetings.	0	0	0	0
6.1.c. Monitor the student's satisfactory level by conducting student opinion survey (SOS).	0	0	0	0
6.1.d. Involve the student organizations in mentoring process.	0	0	0	0
6.2.a. Appoint a coordinator to oversee the overall tutoring/help session efforts in the College.	0	0	0	0
6.2.b. Appoint a coordinator to oversee web-assisted tutorial tasks in the College.	0	0	0	0
6.2.c. Employ student assistants for tutoring/help sessions.	(including in 2.1.b & 2.2.a)	(including in 2.1.b & 2.2.a)	(including in 2.1.b & 2.2.a)	(including in 2.1.b & 2.2.a)
7.1.a. Provide sufficient modern computers in the College as well as the Departmental Computer Labs.	$100,000 (computers)	$100,000 (computers)	$100,000 (computers)	$100,000 (computers)
7.1.b. Provide curriculum-required software in the computer labs.	$100,000 (software)	$100,000 (software)	$100,000 (software)	$100,000 (software)

Strategy / Source				
7.1.c. Provide lab technicians/assistants to help users in the Compute Labs.	$100,000 (lab assist.)	$100,000 (lab assist.)	$100,000 (lab assist.)	$100,000 (lab assist.)
7.2.a. Provide required laboratory facilities to the engineering/computer science/engineering technology programs to support for the curricula.	$600,000 (lab equip.)	$600,000 (lab equip.)	$800,000 (lab equip.)	$800,000 (lab equip.)
7.2.b. Provide sufficient lab technicians/assistants to help users in the laboratories.	$60,000 (student asst.)	$60,000 (student asst.)	$60,000 (student asst.)	$60,000 (student asst.)
8.1&8.2.a. Recruit more graduate students to the graduate programs in the College by providing assistantships, especially the new graduate programs.	$200,000 (assistantships & recruiting expenses)	$200,000 (assistantships & recruiting expenses)	$200,000 (assistantships & recruiting expenses)	$200,000 (assistantships & recruiting expenses)
8.1&8.2.b. Increase external funded research projects to provide research opportunities and financial support for the graduate students. (as a part of goal 4.1, By Fall 2009, increase the College of Engineering external funding from to $7,000,000.)	$4,000,000 (external funded research)	$5,000,000 (external funded research)	$6,000,000 (external funded research)	$7,000,000 (external funded research)
8.1&8.2.c. Employ new faculty members for the graduate programs.	$200,000	$200,000	$300,000	$300,000
(strategy 8.3. is the same as strategy 4.1 due to its nature of research development)	(including in 4.1.)	(including in 4.1.)	(including in 4.1.)	(including in 4.1.)
AUF or other sources	$1081,000	$1081,000	$1,646,000	$1,621,000
E&G (additional)	$100,000	$200,000	$300,000	$400,000
OCR	$1,000,000	$1,000,000	$1,000,000	$1,000,000
Local (Gifts and grants, etc.)	$120,000	$200,000	$250,000	$300,000
External funded Research	$4,000,000	$5,000,000	$6,000,000	$7,000,000
Auxiliary				
Program Fees ( )	$100,000	$120,000	$150,000	$200,000
Projected New Funding Summary	$6,401,000	$7,601,000	$9,346,000	$10,521,000