The University of Alabama College of Engineering  
Department of Electrical and Computer Engineering  

STRATEGIC PLAN 2004 THROUGH 2010

The objective of the Strategic Plan for the Department of Electrical and Computer Engineering is to establish where the faculty wants to be by the end of the year 2010 and how the department is going to get there. The Plan consists four general components:

1. Mission Statement  
2. Vision Statement  
3. Core Value Statement  
4. List of key strategic issues and plans for each key issue.

MISSION

As the original engineering program in the State of Alabama devoted to electrotechnology, and consistent with the Missions of The University of Alabama and the College of Engineering, the Mission of the Department of Electrical and Computer Engineering is:

- To provide high-quality and broad-based undergraduate and graduate education in electrical and computer engineering
- To conduct high-quality research programs that will advance the state of knowledge.
- To contribute to the engineering profession and to society through service activities.

VISION

Guiding current and future activities through the year 2010,

The Department of Electrical and Computer Engineering will be nationally recognized for high-quality educational programs and research through focused activities and excellence of its faculty, staff, graduates, and facilities.

CORE VALUES

Learning: To promote excellence in education and discovery in a caring community for our students, faculty, and staff, helping one another grow.

Discovery: To expand knowledge and human understanding.

Dedication: To do well, to excel at what really matters, and to aspire to greatness.

Diversity: To provide an atmosphere that promotes, appreciates, and embraces differences among people.

Integrity: To foster trust and be consistent, always taking responsibility for our actions.

Teamwork: To work as a team, help each other, and sacrifice for the common good.

Leadership: To excel with integrity and the spirit that nothing is impossible.

Safety: To promote a concern for safety, particularly in our laboratory-based curriculum.

Focus: Realizing that resources are finite, to concentrate our energy and resources for research and graduate studies on three focus areas — Electromechanical Systems, Micro Electromechanical Systems (MEMS), and Information Technology.
PROGRAM GOALS AND STRATEGIES THROUGH 2010

1. Undergraduate Education:

   **Goal:** The Department of Electrical and Computer Engineering will be recognized for its excellence in undergraduate engineering education.

   **Objectives:**
   - Attract and retain students so the ACT scores of enrolled students will average 27 or higher.
   - Provide scholarships for at least one-quarter of our undergraduates.
   - Achieve a minimum of 15% women and 15% underrepresented minorities in our programs.
   - Maintain our electrical engineering and computer engineering programs so they exceed the ABET EC2000 accreditation criteria.
   - Exceed the graduation standards established by the Alabama Commission on Higher Education for undergraduate programs.

   **Strategies:**
   1. Promote an ECE Honors Program as a mechanism to recruit and retain the finest undergraduate students.
   2. In conjunction with the University and College, provide a vigorous undergraduate recruitment to recruit students who have demonstrated excellence in scholarship and leadership.
   3. Seek the advice and assistance of the ECE Advisory Committee on the departmental undergraduate programs and student recruitment.
   4. Participate in the College-wide scholarship program to assign College scholarships to entering freshmen. Seek, obtain, and utilize departmental scholarships for student recruitment and retention.
   5. Encourage students to participate in the Cooperative Education Program or internships so they receive additional and different opportunities for professional practice experience.
   6. Coordinate our electrical engineering and computer engineering programs with the State’s Articulation requirements to allow our freshman- and sophomore-level courses to facilitate non-traditional learners, so those individuals can eventually earn a B.S. degree on The University of Alabama.
   7. Participate in the College of Engineering’s Freshman Experience, including a freshman-level introductory course for electrical and computer engineering.
   8. Support the IEEE Student Branch and the HKN Honor Society, and encourage students to join and be active.
   9. Through participation in the College MEP, and the NSBE and SWE student societies, build on our success in recruiting, retaining, and graduating minority and women engineers.
   10. Participate in college/high-school bridge programs, such as SITE, that introduce minority and women students to the opportunities for careers in engineering and computer science.
   11. Increase undergraduate involvement in research.
   12. Maintain accreditation standards through Educational-Objectives assessment, Program-Outcomes assessment, and continuous curriculum improvement for both the electrical engineering and computer engineering programs.
   13. Ensure Educational Objectives respond to stakeholder and constituency needs and Program Outcomes follow the requirements of ABET General and Program Criteria.

2. Graduate Education:

   **Goal:** The Department will graduate students with advanced degrees who are recognized for their excellence.

   **Objectives:**
   - Maintain Graduate-Faculty status of all ECE faculty members.
   - Focus departmental resources on attracting highly qualified graduate students.
   - Increase our graduate enrollment so the average number of Ph.D. students per graduate faculty member is greater than 1.5, and each faculty member is the dissertation advisor of at least one Ph.D. student.
   - Exceed graduation requirements of the Alabama Commission on Higher Education to ensure viability of both our M.S. and Ph.D. programs by increasing doctoral-graduation rates to an average one for every third year for all ECE faculty members.
• Have a graduate student-to-faculty ratio of approximately five to one.

Strategies:
1. Recruit excellent graduate students from The University of Alabama, nationwide and worldwide, as measured by the quality of student’s undergraduate program, undergraduate grades, and appropriate national examination scores.
2. Increase graduate student stipends to levels that are nationally competitive for attracting excellent graduate students.
3. Increase the number of graduate students supported on research assistantships.
4. Have faculty attract sufficient externally funded research to provide graduate students with meaningful research opportunities and professional development options.
5. Initiate an aggressive program of post-doctoral development and support to assist research faculty and programs.
6. Expect graduate students to be active in their own scholarship development, publishing the results of their research in refereed journal publications and conference proceedings.
7. Develop and maintain excellent research laboratories and offices so our graduate students work as professionals with outstanding learning opportunities.
8. Expand our Internet-based interactive graduate-course offerings within the University of Alabama System.
9. Offer research seminars to foster research collaboration.
10. Seek the advice of the ECE Advisory Committee on graduate-program matters.

3. Research and Scholarly Activities

Goal: All Department faculty members will participate in research and scholarly activities, and nearly everyone will participate in funded research supportive of our advanced degree programs.

Objectives:
• Achieve an average greater than $200,000 in expenditures per year per faculty member.
• Include graduate-student support in most externally funded research proposals.
• Concentrate research efforts and resources on the departmental focus areas of electromechanical systems, micro-electromechanical systems, and information technology.
• Have ECE faculty members average a combination of over two peer-reviewed journal papers and/or three peer-reviewed conference papers per year by 2010.

Strategies:
1. Continue to develop and support the departmental focus areas of electromechanical systems, micro-electromechanical systems, and information technology. As we grow in our research, we will seek other research thrusts that will allow our faculty members to enhance their interdisciplinary research.
2. Allow the curiosity and capabilities of faculty members to determine their own research directions and issues.
3. Assist faculty in securing research and development contracts and grants.
4. When budgets allow, share departmental release funds with the contributing faculty to provide additional resources for their development.
5. Encourage faculty to publish their research results in refereed publications regarded as significant in their field.
6. Expect faculty members, as appropriate, to disseminate knowledge and expertise through conference presentations and technical seminars.
7. Search for synergy among faculty members within the Department, the College, among colleges, and among universities to promote interdisciplinary research teams.
8. Actively develop and support interdisciplinary research centers to support our faculty members.
9. Support the University Library System efforts so access to electronic journals and on-line databases are continued.
4. **Faculty Development**

**Goal:** The Department will assist in providing every opportunity for our faculty members to continue to learn and develop their capabilities as teachers and scholars.

**Objectives:**
- Provide financial and graduate-assistant support to faculty members for their development, particularly for research and scholarly activities and for tenure-track faculty, within available departmental resources.
- Mentor tenure-track faculty members to assist in their development.
- Fill the Larry Drummond Endowed Chair of Computer Engineering.
- Increase the number of faculty members, endowed chairs, and endowed professorships, which emphasis on minority and women recruitment.

**Strategies:**
1. Within the capabilities of the Department, provide the resources necessary to permit faculty members to focus on their primary roles of teaching, research, and service unencumbered by extraneous activities or paper work.
2. Promote active involvement in professional organizations that enhance leadership and improve personal development and success.
3. Seek College support to submit an Enhancement Grant proposal to the Provost that requests additional faculty positions.
4. Provide Sabbatical opportunities for faculty members to promote learning at extramural distant sites for extended periods.
5. Foster excellence and innovation in teaching among all faculty members.
6. Recognize and expect that faculty members will become internationally recognized scholars, and continue to take advantage of opportunities to recognize the past accomplishments of faculty members and support their future accomplishments.

5. **Facilities**

**Goal:** The Department of Electrical and Computer Engineering will develop and maintain quality facilities.

**Objectives:**
- Provide classroom facilities with exceptional learning environments that incorporate modern teaching technologies for multi-media, as well as Internet-based courses to the University of Alabama System.
- Provide laboratories that utilize equipment found routinely in the facilities of entities that employ our students.
- Equip research and teaching laboratories to enable the faculty and students to produce nationally recognized research outcomes.

**Strategies:**
1. Implement a plan for maintaining, replacing, and modernizing laboratory equipment.
2. Working with the ECE Advisory Committee, develop an endowment for department laboratory and equipment support.
3. Submit equipment proposals by faculty to external sponsors.
4. Seek gifts to leverage against proposed equipment grants.
5. Invest indirect costs returned to the Department in enhancing departmental laboratories.

6. **Staff**

**Goal:** The Department of Electrical and Computer Engineering will have excellent, well-trained staff to assist the faculty in their teaching, research, and service missions and to assist students in their learning activities.

**Objectives:**
• Offer training, encouragement, and continuing-education opportunities to enhance employee advancement, growth, and advancement.
• Treat departmental staff with the respect deserved as being part of the departmental community.

Strategies:
1. Maintain staff recognition programs with special awards.
2. Enable up-to-date applicable reward-based training for all staff.
3. Evaluate and continuously improve all departmental administrative processes.
4. Provide state-of-the-art equipment to maximize staff performance.

7. Outreach to Alabama and National Industry

Goal: The Department of Electrical and Computer Engineering will be that organization to which Alabama and national industry and government turns when seeking solutions to their electrotechnology problems.

Objectives:
• Produce excellent computer engineering and electrical engineering undergraduate and graduate students who are sought by Alabama and national industry and government for employment
• Have the quality and size of undergraduate and graduate programs of instruction and research that will help attract new industry to Alabama.
• Help build the electrotechnology industrial infrastructure of Alabama.

Strategies:
1. Ensure that the faculty expertise and accomplishments are documented and publicized.
2. Investigate and, if advisable, start an industrial visitors program, targeting electrical engineering and computer engineering areas important to Alabama’s economic growth and development.

8. Development and External Relations

Goal: We will increase the awareness of industry, alumni, and governmental leaders concerning the Department of Electrical and Computer Engineering’s accomplishments and excellence and, thus, help obtain their financial support.

Objectives:
• Work with the College of Engineering’s Development Office to increase external financial support and gifts for departmental faculty support, laboratories, operations, and scholarships.
• Promote and maintain an active, contributing ECE Advisory Committee.
• Institute departmental industrial/alumni relationship programs.
• Provide visibility and awareness of the departmental faculty and student activities and accomplishments.

Strategies:
1. Assist the College Development Office to identify major donors associated with the departmental disciplines, get to know them, understand their interests, present gift proposals, and obtain their gifts.
2. Continue a close relationship with past donors, continually thanking them and emphasizing the importance of their gift.
3. Seek the advice and assistance of the ECE Advisory Committee to (a) provide assistance in identifying individual prospective donors, (b) serve as advocates for the department and College, and (c) provide direction and guidance.
4. Develop and publish a departmental annual report.
5. Use the Web as a major tool for disseminating information.
6. Develop and distribute departmental information via print and electronic media.