The Hashemite University
College of Engineering
Department of Computer Engineering
STRATEGIC PLAN 2007 THROUGH 2012

The objective of the Strategic Plan for the Department of Computer Engineering (CpE) at the Hashemite University is to establish where the department wants to be by the end of the year 2012 and how the department is going to get there. The Plan consists of five general components:

1. Mission Statement
2. Vision Statement
3. Goals and Objectives Statement
4. Core Value Statement
5. List of key strategic issues and plans for each key issue.
     - Undergraduate Education
     - Graduate Education
     - Research and Scholarly Activities
     - Faculty Development
     - Facilities
     - Staff
     - Outreach to National Industry
     - Development and External Relations

1. MISSION

As the original engineering program in Jordan is devoted to applied technology in general, and consistent with the Missions of The Hashemite University and the College of Engineering, the Mission of the Department of Computer Engineering is:

– Achieve teaching excellence, world-class research, and leadership development in computer engineering by imparting fundamental principles, skills, and tools to innovate and excel.
– Prepare CpE students for the future by providing them the highest quality education, which includes, fundamental knowledge, multiple modes of learning, and flexibility
– Provide exciting research opportunities for all CpE faculty and students that advance the state of knowledge in CpE disciplines and at the interface between CpE and related disciplines
– Conduct cutting-edge research in collaboration with industry and eminent international institutions.
– Respond to the needs of the kingdom and region by building a strong outreach program that serves industry and the engineering profession.
– Provide high-quality and broad-based undergraduate and graduate education in computer engineering
– Contribute to the engineering profession and to society through service activities.

2. VISION

Guiding current and future activities through the year 2012, The Department of Computer Engineering (CpE) will be nationally recognized for high-quality educational programs, research, lifelong learning, and leadership through focused activities and excellence of its faculty, staff, graduates, and facilities.

3. <u>GOALS and OBJECTIVES</u>

Guiding current and future activities through the year 2012, CpE department seeks to achieve the following general goals and objectives (*Specific goals and objectives are described in Section* 5):

1. To recognize the department for its excellence in undergraduate engineering education.
2. Raise the department profile locally and internationally and promote self-learning through structured courses.
3. Design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
4. Understand professional and ethical responsibility and communicate effectively
5. Provide the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context of computer engineering.
6. To be able to use the techniques, skills, and modern engineering tools necessary for computer engineering practice.
7. Provide sufficient flexibility to support various areas of specialization within the field of computer engineering.
8. Prepare students for a professional career in computer engineering by establishing a foundation for lifelong learning and development.
9. Provide a platform for further work leading to graduate studies in computer engineering.
10. Engage in activities and apply modern computer engineering techniques, tools, and practices in a manner that contributes to the benefit of the society.

4. 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 future graduate studies on three focus areas — Real and Embedded Systems, Data Security and Computer Networks, and Computer Organization, architecture, and Maintenance.

5. PROGRAM GOALS AND STRATEGIES THROUGH 2012

5.1. <u>Undergraduate Education:</u>

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

Objectives:

• Attract and retain students so the GSSC (Tawjihi) scores of enrolled students will average 90% or higher.
• Provide scholarships or financial aid for at least one-quarter of our undergraduates.
• Achieve a minimum of 30% women and 15% International students in our programs.
• Maintain our computer engineering programs so they exceed the ABET EC2005 accreditation criteria.
• Exceed the graduation standards established by the Commission on Higher Education under the Ministry of Higher Education for undergraduate programs.

Strategies:

1. Promote a CpE Honors Program as a mechanism to recruit and retain the finest undergraduate students (See Table I).
2. In conjunction with the new University and College policy, provide a vigorous undergraduate recruitment to recruit students who have demonstrated excellence in scholarship and leadership.
3. Seek the advice and assistance of the CpE Advisory Committee – TBF -- on the departmental undergraduate programs and student recruitment.
4. Open Cooperative Education Program with computer Industry that can supply wide opportunities 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. Participate in the College of Engineering's Freshman Experience, including a freshman-level introductory course for computer engineering.
7. Support the IEEE Student Branch and any other Honor Society, and encourage students to join and be active.
8. Create and Participate in a college/high-school bridge programs, which introduce to high school students the opportunities for careers in computer engineering graduates.
9. Increase undergraduate involvement in research.
10. Maintain accreditation standards through Educational-Objectives assessment, Program-Outcomes assessment, and continuous curriculum improvement for computer engineering program.
11. Ensure Educational Objectives respond to stakeholder and constituency needs and Program Outcomes follow the requirements of ABET General and Program Criteria.

#	Degree	Current /	New Students /	New Students /	New Students /	New Students /
	Bachelor					
	Master					
	Total					

Table I: Student admission through 2012.

5.2. Graduate Education

Goal: The Department plans to open programs for advanced degrees in the next 2-3 years.

5.3. 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 degree programs.

Objectives:

- Achieve an average greater than J.D.*10, 000.0* in expenditures per year per faculty member.
- Include undergraduate-student and graduate -if any- support in most externally funded research proposals.
- Concentrate research efforts and resources on the departmental focus areas of Real and Embedded Systems, Data Security and Computer Networks, and Computer Organization, architecture, and Maintenance.
- Have CpE faculty members average a combination of over two peer-reviewed journal papers and/or three peer-reviewed conference papers per year by 2012 (See Table II).

Strategies:

1. Continue to develop and support the departmental focus areas of Real and Embedded Systems, Data Security and Computer Networks, and Computer Organization, architecture, and Maintenance. 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 efforts so access to related electronic journals and on-line databases are continued.

#	Subject	Current /	New /	New /	New /	New /
	Books					
	Translated Books					
	Published Papers					
	Submitted Papers					
	Active Research					

Table II: Research activities in CpE through 2012.

5.4. 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 support to faculty members through official means for their development, particularly for research and scholarly activities and for tenure-track faculty, and within available departmental resources.
• Mentor tenure-track faculty members to assist in their development.
• Seek to open a number of funded Chair-Professor of Computer Engineering.
• Increase the number of faculty members, endowed chairs, staff, and supporting staff with emphasis on recruitment of talented and high profile people (**see Table III**).

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 community service 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 requests of additional faculty positions.
4. Provide Sabbatical opportunities for faculty members to promote learning at external 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.

#	Degree	Current /	/	/	/	/
	Full Professor			-	-	–
	Associate Professor	-	-			٢
	Assistant Professor					١٢
	Teacher	-			-	–
	Full-Time Lecturer	-	-	-	-	–
	Part-Time Lecturer	-	-	-	-	–
	TA's & RA's	-				٢
	Lab Supervisor					٦
Total						٢٢

Table III: Faculty and Staff Development in CpE Department through 2012

Since the department is newly established in 2006, there is an ambitious plan to send distinguished B.Sc. and M.Sc. holders in scholarships to highly reputable schools in USA, GB, and Canada to obtain higher degrees in the various fields of computer engineering (see Table IV)

Academic Year	Current /		New /		New /		New /		New /	
Major	M.Sc	Ph.D	M.Sc	Ph.D	M.Sc	Ph.D	M.Sc	Ph.D	M.Sc	Ph.D
Computer Engineering	٢	٧	.	١	.	١	.	١	.	.

Table IV: Graduate students on scholarships through 2012.

5.5. Facilities

Goal: The Department of 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 Hashemite University Learning 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 CpE 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, if allowed.
5. Invest indirect costs returned to the Department in enhancing departmental laboratories.

5.6. Staff

Goal: The Department of 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.

5.7. Outreach to National Industry

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

Objectives:

• Produce excellent computer engineering undergraduate and graduate students who are sought by Jordan, national and regional 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 Jordan.
• Help build the industrial computation and communication infrastructure of Jordan.

Strategies:

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

5.8. Development and External Relations

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

Objectives:

• Work with the College of Engineering's Development and Industrial Relations Office to increase external financial support and gifts for departmental faculty support, laboratories, operations, and scholarships.
• Promote and maintain an active, contributing CpE 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 and Industrial Relations 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 CpE 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.

#	Subject	Until /	/	/	/	/
	Conference Contributions					
	Holding Conferences	-	-		-	
	Seminar Contributions					
	Holding Seminars					
	Training Programs					
	Consultations	-	-			
	Online Courses					

Table V: Events in CpE through 2012.