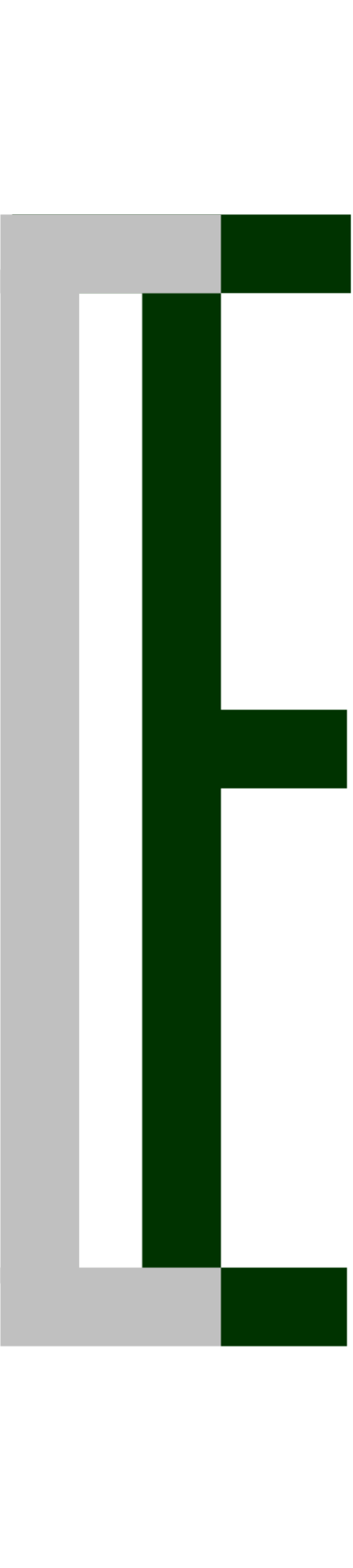# College of Engineering

Strategic Plan

1436-37 (H)/ 2016-17 (G)

"To meet the international standards as a source of excellence in engineering learning and center of research in the university"

KING KHALID UNIVERSITY

College of Engineering كلية الهندسة KKU

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Purpose

Engineering touches all aspects of civilization. Great works of humankind, from the construction of the pyramids to the creation of the smart technology, are phenomena of engineering. Engineering is growing discipline that resuscitates itself to explore and create solutions to new engineering problems. Progress in engineering is determined by the application of varied fields of people understanding and subject to periods of rapid enlightenment brought about by advances in engineering technology. Thus, while strategic planning is important for any institution, it is critical for college of engineering where its role is two-fold: leadership in creating revolutionary technological advances through scientific and applied discovery; and education of students who will have a significant positive impact as per the societal needs. The process of strategic planning in an academic environment is unique, in part because the inputs and especially the outputs of the academic effort and the value that they add are often not readily quantifiable. How do we gauge the value added to society if a college of engineering, king Khalid university graduate becomes a teacher who inspires generations of students? We have tried to include intangibles in the process, tempering the value that scientists and engineers traditionally assign to metrics and balancing it with a healthy respect for elusive but very real qualities such as collegiality, integrity, and leadership.

About College of Engineering

The Royal Decree Order No. (7 / B / 4096) was issued on 14/03/1420 H to establish the College of Engineering. The establishment of this college was decided to keep pace with the renaissance of the Kingdom in many areas as the engineering is a profession that employs science to serve the welfare of society as well as to follow the scientific progress and technology in the twenty-first century, to meet the engineering labour market needs in the southern and south-western regions of the kingdom. The college started its activities and functions on the academic year 1422/1423 H where 110 students were accepted in the first semester, they were distributed in the departments of Mechanical Engineering and Industrial Engineering.

Aware of the university to keep up with the prospects of scientific and technical development and the contribution of the university in filling manpower needs in the fields of engineering with highly qualified engineering staff. Aligning with the development plans of the Kingdom. It has been approved in 08/05/1426 H to create the departments of Electrical Engineering, Chemical Engineering, Civil Engineering departments as well as the department of Architecture and Planning.

College Vision

To meet the international standards as a source of excellence in engineering learning and center of research in the university

College Mission

To prepare a qualified engineering staff equipped with essential knowledge and skills in dealing with modern engineering technologies, in order to develop and improve our country's future plans

COLLEGE OBJECTIVES

➢ Development and innovation of engineering curricula studied to the changing needs in this field

➢ Configuration of strategic relationship with local and world-wide universities for research partnership and technology transfer

➢ Encourage and support professional development for staff members and students

➢ Support education and scientific research by academic services and effective management and technology

➢ Contributing into the development of the community by preparing and organizing educational programs and trainings in engineering continuously
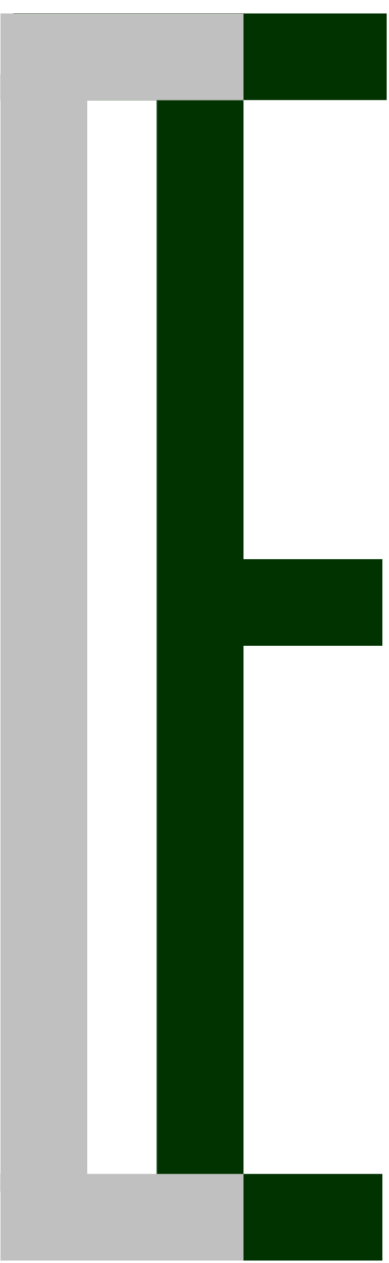
The Strategic Themes of the Engineering College

Strategic Themes of the Engineering College are

1. Academic Excellence

2. Participative Cognitive and Research Environment

3. Effective competitive academic programs

4. Meeting the requirements and needs of the labor market

5. Diversification of sources of income and the optimal resource utilization

6. Institutional Development

The following tables outline the Strategic theme, goal, strategic objectives and Key Performance Indicators (KPI's) associated with various initiatives of the College of Engineering Strategic Plan.
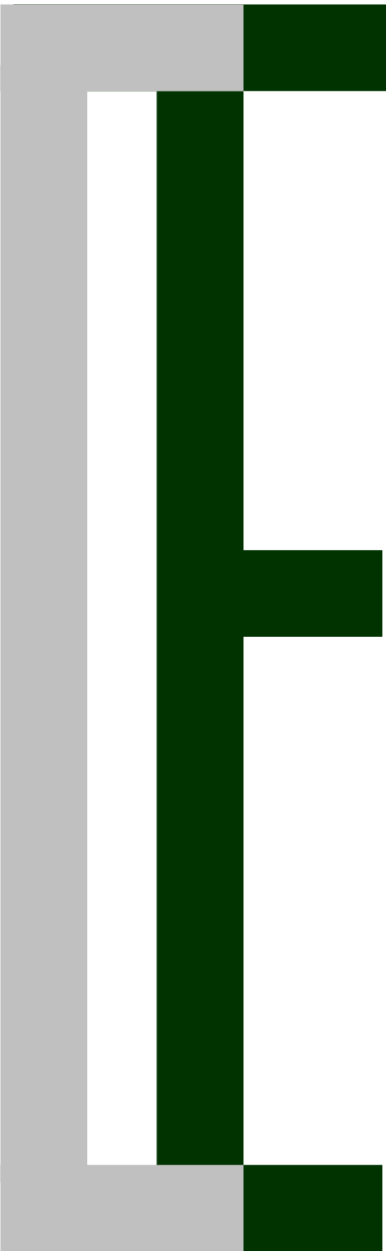
Strategic Theme	1. Academic Excellence
Strategic Goal (description of a destination)	• Provide a world-class undergraduate engineers • Produce diverse high- quality students • Produce graduates with quality oriented degrees who become national and international leaders in their field.
Strategic Objectives (measure of the progress that is needed to get to the destination)	• Implement effective means of enhancing the College of Engineering's visibility outside the university • Deploy world-leading first-year engineering programs and continuously innovate major curricula. • Enable experiential learning across the 5-year curriculum. • Admit a high quality diverse student body. • Build new external partnerships to enable rapid integration of students into engineering careers. • Appoint and develop the best teachers • Achieve an Undergraduate student ratio that matches our peer group. • Provide relevant information and experiences that prepare students for the job search process. • Increase support and professional development for undergraduate graduate students. • Increase the number and competitiveness of KKU students applying for higher studies. • Support local industry through internships an cooperative education

Strategic Theme: 1. Academic Excellence

Initiatives	Measurable Indicators	Level
Attract and recruit outstanding students to our undergraduate programs.	KPI 1.1: Percentage of students entering the engineering programs who successfully complete first year. KPI 1.2: Percentage of College promotional articles in the College's newsletters and website. KPI 1.3: Percentage of foreign students in the undergraduate student population in the College.	Program College
Encourage and retain undergraduate students throughout their course of study.	KPI 1.4: Proportion of students entering undergraduate programs who complete those programs in minimum time. KPI 1.5: Percentage of students satisfied with the College education programs (course evaluation survey results) KPI 1.6: Percentage of budget allocated to students activities in the College (with respect to total budget). KPI 1.7: Percentage of students participating in national and international exhibitions, seminars and contests.	Program College
Develop student-centered learning experiences through engineering curricular and extra-curricular activities.	KPI 1.8: Percentage of students in the College who participate in extra-curricular activities. KPI 1.9: Number of students in the College who publish or submit patents from their graduation projects. KPI 1.10: Number of self-learning units and/or forums' activities furnished by the College.	College

Strategic Theme: 1. Academic Excellence

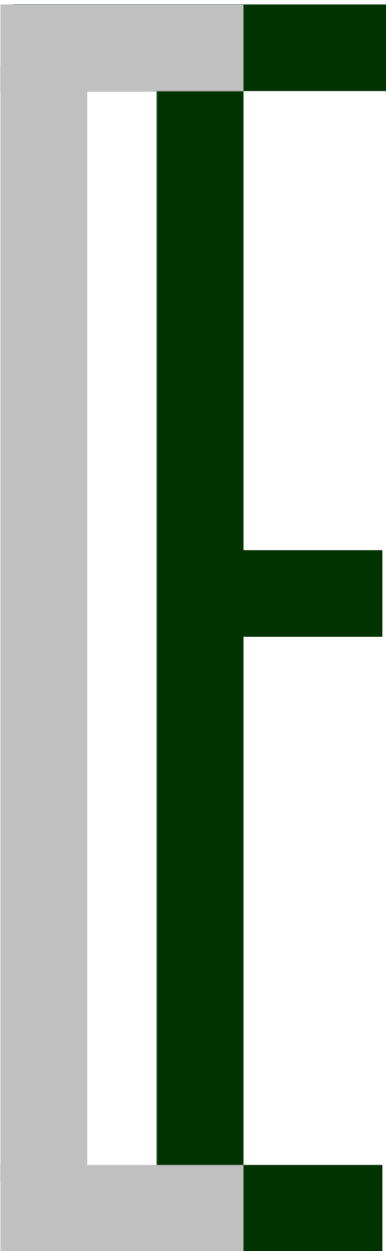| Initiatives	Measurable Indicators	Level
Encourage students to join scientific and professional societies and support their activities.	KPI 1.11: Percentage of College students who participate in self-skills development and professional training activities. KPI 1.12: Number of yearly events organized by the College which include invitation and participation of potential employers. KPI 1.13: Number of yearly professional engineering exams conducted by the College.	College
Maintain the size and strength of the Program for recruitment and retention of undergraduate students and maintain good student-to-faculty ratio.	KPI 1.14: Ratio of students to teaching staff (based on full time equivalents) KPI 1.15: Ratio of students to administrative staff	Program College
Raising awareness in students for the importance of specialized training (summer internship), which focuses on improving the skills of trainee	KPI 1.16: Average knowledge rating of college of engineering trainee based on importance of company and achievement of engineering students (Trainee)	College
All undergraduates in COE will participate in research, engineering society (i.e. ASCE, ASME, IEEE etc)	KPI 1.17: Ratio of participate in research, engineering society to those with normal undergraduate students.	College
Curricula continuously revised and update as per the standard of NCAAA and ABET.	KPI 1.18: Number of meeting organized with stakeholder related to continuously revised and update curricula	Program College
Graduate students registered with Saudi engineering council	KPI 1.19: Number of Graduate students registered with Saudi engineering council	College
Graduate students participate in professional development activities.	KPI 1.20: Number of Graduate students participates in professional development activities.	College
Increase the number of graduate students applying for higher studies supported by fellowships	KPI 1.21: Number of graduate students applying for higher studies supported by fellowships	College

Strategic Theme	2.　Participative Cognitive and Research Environment
Strategic Goal (description of a destination)	• Raise signature multidisciplinary research programs and be a national leader in research for industrial impact. • Develop the succeeding generation of great engineering faculty by recruiting at the connection of the College's strategic thrusts, the university's goal, and the global challenges.
Strategic Objectives (measure of the progress that is needed to get to the destination)	• Recruit and retain research-track faculty aligned with strategic research growth areas. • Increase the quality and quantity of scholarly output. • Fully engage the university's goal process to leverage resources for faculty hiring. • Focus faculty recruitment, development and retention processes on performance that elevates the impact of college's research and academic programs.

Strategic Theme: 2. Participative Cognitive and Research Environment		
Initiatives	**Measurable Indicators**	**Level**
Impact the national and global science and technology program	KPI 2.1: Number of research chairs, centers of excellence and research groups. KPI 2.2: Funds for research chairs, centers of excellence and research groups as percentage of the college budget. KPI 2.3: Number of SCI (ISI) publications by faculty member. KPI 2.4: Number of patents.	Program College
Increase multi-disciplinary research	KPI 2.5: Number of multi-disciplinary projects with other departments, industry, government and the community.	College
Expand the research enterprise activities	KPI 2.6: Number of collaborative research projects. KPI 2.7: Number of graduate students coming from the industry. KPI 2.8: Number of employees from the industry involved in research cooperation with the college.	Program College
Support the talented and innovator creative process.	KPI 2.9: Amount of funds from government sources and/or from private sources dedicated to talented and innovators technicians. KPI 2.10: Number of graduate students. KPI 2.11: Number of hired research	Program College
Raise an environment for encouraging leadership in research and that rewards all research activities.	KPI 2.12: Number of faculty serving on editorial boards of international SCI (ISI) journals. KPI 2.13: Number of faculty who served as editors or sessions' chairs in international conferences. KPI 2.14: Number of faculty invited for key note speakers or plenary lectures at international conferences.	Program College

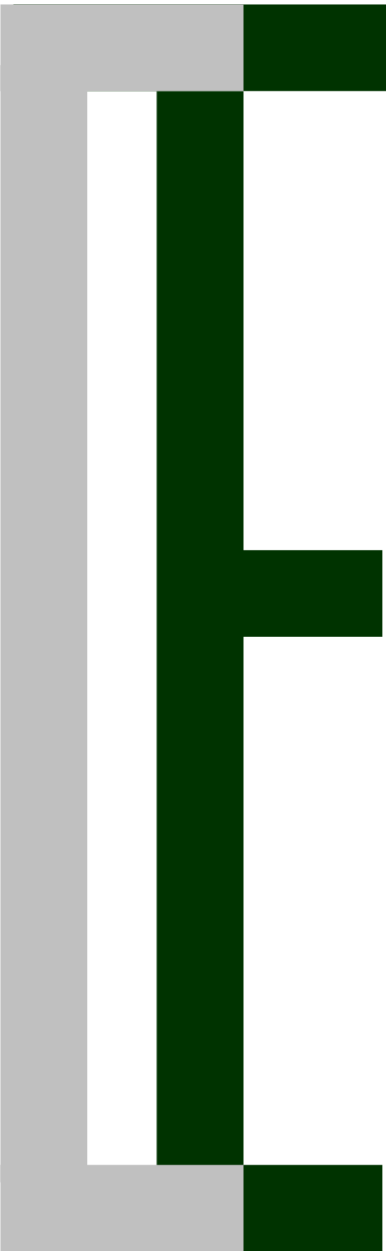| Strategic Theme: 2. Participative Cognitive and Research Environment		
Initiatives	**Measurable Indicators**	**Level**
Recruit and retain highly qualified faculty.	KPI 2.15: Percentage of faculty publications in SCI listed journals per year (on average). KPI 2.16: Percentage of faculty member leaving the college for reasons other than retirement. KPI 2.17: Number of faculty awards for innovative and talented ideas, remarkable activities and teaching excellence. KPI 2.18: Proportion of teaching staff with verified doctoral qualifications.	Program College
Manage the faculty size to maintain the balanced between teaching and research areas	KPI 2.19: Student-faculty ratio KPI 2.20: Ratio of research activity load for research-active faculty (engaged in more than one research project per year on average) to those with normal research activity. KPI 2.21: Percentage of faculty who are involved in administration work.	Program College

Strategic Theme	3. Effective Competitive Academic Programs
Strategic Goal (description of a destination)	Development and innovation of engineering curricula studied to the changing needs in the engineering field
Strategic Objectives (measure of the progress that is needed to get to the destination)	• Curricula that are recognized as innovative and progressive by a broad spectrum of stakeholders. • Achieve NCAAA program specific and/or ABET Accreditation • Establish Master degree programs

Strategic Theme: 3. Effective Competitive Academic Programs

Initiatives	Measurable Indicators	Level
Provide curricula that accomplish the learning outcomes of ABET and NCAAA	KPI 3.1: Student's rating (on a five- point scale) of course level achievement KPI 3.2: Faculty rating (on a five- point scale) of course level achievement KPI 3.3: Weighted average (on a five- point scale) of program level achievement	Program College
Develop and implement appropriate assessment practices and enrich educational excellence.	KPI 3.4: Constituencies (employer, academic advisor and Alumni) rating of program achievement level KPI 3.5: Percentage of students who successfully complete the undergraduate program at minimum time KPI 3.6: Percentage of engineering graduates that are employed KPI 3.7: Percentage of students pursuing post graduate programs within six months of graduation KPI 3.8: Percentage of graduates who have been start-up own firm (not seeking employment)	Program College
Encourage the Continuous development of curricula.	KPI 3.9: Stakeholders' awareness ratings of the Mission Statement and Program Objectives (Average rating on how well the mission is known to teaching staff, and undergraduate and graduate students, respectively, on a five- point scale in an annual) KPI 3.10: Percentage of senior design projects related to industry and governmental agencies KPI 3.11: Average period of reviewing and updating existing courses KPI 3.12: Average period of reviewing and updating the program	College
Evaluate preparatory year as well as integrated engineering first- and second-year experience and revise accordingly.	KPI 3.13: Average grade of students entering the college after 1st year KPI 3.14: Percentage of students entering program who successfully complete first year and second year within minimum time	Program College
Enhance the design and practical implementation, teamwork and leadership skills for the engineering graduates.	KPI 3.15: Percentage of multi-disciplinary senior design projects KPI 3.16: Percentage of Senior design project sponsored/funded KPI 3.17: Employer rating of Senior design project achievement level	Program College

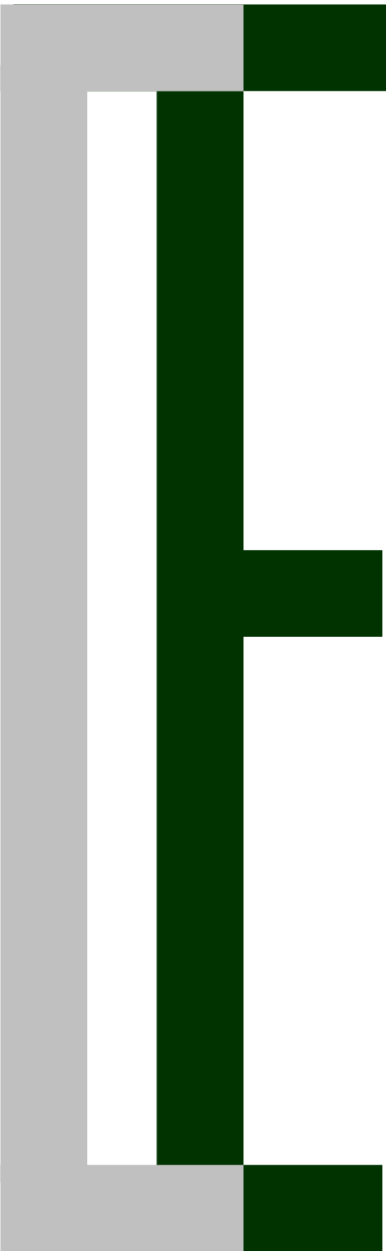## Strategic Theme: 3. Effective Competitive Academic Programs

Initiatives	Measurable Indicators	Level
Promote motivation to excel and build up self-dependability, critical and analytical thinking and problem solving skills in the college students.	KPI 3.18: Proportion of full time teaching and other staff actively conducted the workshops and seminars KPI 3.19: Proportion of students awarded by the college KPI 3.20: Number of awarded graduation projects per year	College
Revitalize engineering education to include experiential hands-on learning as an integral part of the education process.	KPI 3.21: Percentage of students taking off campus educational lab experiences KPI 3.22: Number of agreements with professional organizations	College
Provide high quality graduate education.	KPI 3.23: Percentage of graduate students who complete their program within minimum time with respect to the student entering the program KPI 3.24: Number of publications per year KPI 3.25: Number of Industrial visit per year	Program College

Strategic Theme	4. Meeting the requirements and needs of the labor market
Strategic Goal (description of a destination)	• Support the activities of community service • Enhance the quality of performance in the college
Strategic Objectives (measure of the progress that is needed to get to the destination)	• Exhibit social and professional responsibility in the practice of engineering as demonstrated by the involvement in community service • Evidence of commitment to lifelong learning, solving the problems of society and the labor market, multidisciplinary research, and Membership in professional organizations

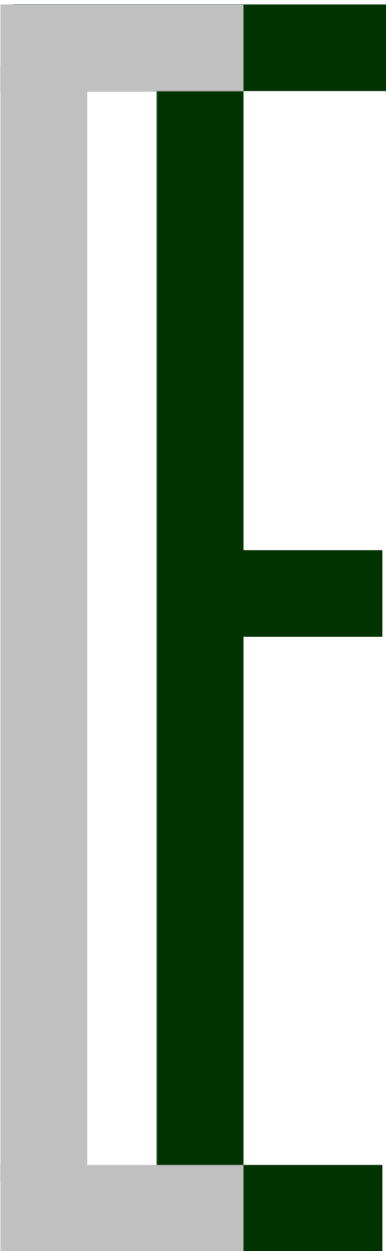| Strategic Theme: 4. Meeting the requirements and needs of the labor market		
Initiatives	**Measurable Indicators**	**Level**
Develop a plan to enhance the community service activities, monitor engineering problems and find appropriate solutions according to the college goals.	KPI 4.1: Proportion of full time teaching and other staff actively engaged in community service activities.	Program College
Provide and develop community services (sessions, consulting, continuing education, seminars, and workshops).	KPI 4.2: Number of community education programs provided as a proportion of the number of departments.	College
Participate in socio-cultural and community events.	KPI 4.3: Proportion of full time teaching and other staff actively Participate in socio-cultural and community events	College
Evaluate and measure the level of satisfaction of the constituencies about the college service.	KPI 4.4: Constituencies satisfaction related to the involvement in community services (Average overall rating on a five point scale of an annual survey).	College
Augment the contributions of college faculty members in community service activities.	KPI 4.5: Faculty satisfaction related to the involvement in community service activities (Average overall rating on a five point scale of an annual survey).	Program College
Computerizing all administrative services.	KPI 4.6: Satisfaction related to the Computerizing all administrative services (Average overall rating on a five point scale of an annual survey).	College
Apply for local research projects funded by public and private entities such as Municipalities, SABIC and KACST.	KPI 4.7; Proportion of full time teaching and other staff actively engaged in apply for research projects funded by public and private entities such as Municipalities, SABIC and KACST.	College
Motivate to get the membership in professional organizations	KPI 4.8: Number of membership in professional organizations	College
Following a system that advises students of their academics issues like, examination schedules and evaluations assessments.	KPI 4.9: Satisfaction related to the advises students of their academics issues like, examination schedules and evaluations assessments. (Average overall rating on a five point scale of an annual survey).	College

Strategic Theme	5. Diversification of sources of income and the optimal resource utilization
Strategic Goal (description of a destination)	Pursue a set of comprehensive facilities and administration plans for the College that can accelerate the development efforts and facilitate the mission and vision of its strategic plan.
Strategic Objectives (measure of the progress that is needed to get to the destination)	• To ensure efficient and effective use of the facilities available. • A careful review of available infrastructure, facilities and resources • Plans for maintenance and development of the laboratories.

Strategic Theme: 5. Diversification of sources of income and the optimal resource utilization		
Initiatives	**Measurable Indicators**	**Level**
Establish mechanism for Annual expenditure on academic infrastructure budget	KPI 5.1: Annual expenditure on IT budget, including: a) Percentage of the total Institution, or College, or Program budget allocated for IT; b) Percentage of IT budget allocated per program for institutional or per student for programmatic; c) Percentage of IT budget allocated for software licences; d) Percentage of IT budget allocated for IT security; e) Percentage of IT budge allocated for IT maintenance.	College
Achieve and maintain sufficient facilities	KPI 5.2: Stakeholder evaluation of the IT services. (Average overall rating of the adequacy of: a) IT availability, b) Security, c) Maintenance, Accessibility and Support systems, d) Software and up-dates, e) Age of hardware, and f) Other viable indicators of service on a five- point scale of an annual survey.)	College
	KPI 5.3: Stakeholder evaluation of a) Websites and learning services b) Hardware and software c) Accessibility d) Learning and Teaching e) Assessment and service f) Web-based electronic data management system or electronic resources (for example: institutional website providing resource sharing, networking & relevant information, including e-learning, interactive learning & teaching between students & faculty on a five-point scale of an annual survey).	College
Budget allocated for student services	KPI 5.4: Proportion of total operating funds (other than accommodation and student allowances) allocated to provision of student services.	College

Strategic Theme: 5. Diversification of sources of income and the optimal resource utilization		
Initiatives	**Measurable Indicators**	**Level**
Effectively manage the available space and land resources for academic learning activities, living, and lab work.	KPI 5.5: Number of square meters per student. KPI 5.6: Number of square meters allocated for faculty and staff activities. KPI 5.7: Proportion of space allocated for teaching and learning activities (class rooms, labs etc.)	College
Achieve and maintain sufficient quality of space and infrastructural facilities.	KPI 5.8: Proportion of smart classrooms to the total number of classrooms. KPI 5.9: Number of accessible computer terminals per student. KPI 5.10: Annual expenditure on IT per student.	College
Enhance safety and security operations to support the college's research, learning, and other engagement activities.	KPI 5.11: Number of health safety training programs provided for College of Engineering per year. KPI 5.12: Number of safety related incidents in the College of Engineering per year.	College
Progress and implement initiatives to enhance administration operational efficiencies and customer service.	KPI 5.13: Proportion of constituencies satisfied with administrative processes based on survey results. KPI 5.14: Proportion of paper work not completed within the required dead line.	College
Attract and recruit, develop, and retain quality support staff.	KPI 5.15: Number of training and development programs per staff per year KPI 5.16: Number of support staff awarded for quality performance per year.	Program College

Strategic Theme	6. Institutional Development
Strategic Goal (description of a destination)	Improving the institutional procedures, processes, and policies. Strategic partnerships with industry, government agencies, and King Khalid University entities that provide mutual benefit to all constituencies involved. Our strategic partners will be champions on our behalf due to their positive partnership experiences with the College of Engineering
Strategic Objectives (measure of the progress that is needed to get to the destination)	• Establish partnerships with government, Industry (private sector), and design office. • Expand multi-faceted support (financial, experiential learning, advisory) of industry partners in College outreach programs • Generating engineering career awareness and assisting with engineering job supports. • Recognize and/or reward exemplary outreach achievements of faculty, staff, and students

Strategic Theme: 6. Institutional Development

Initiatives	Measurable Indicators	Level
Establish mechanisms for improving and updating the mission and objectives	KPI 6.1: Stakeholders' awareness ratings of the Mission Statement and Objectives (Average rating on how well the mission is known to teaching staff, and undergraduate and graduate students, respectively, on a five- point scale in an annual survey).	Program College
Establish mechanism for governance administration (policies and including administrative flow chart and job responsibilities)	KPI 6.2: Stakeholder evaluation of the Policy Handbook, including administrative flow chart and job responsibilities (Average rating on the adequacy of the Policy Handbook on a five- point scale in an annual survey of teaching staff and final year students).	College
	KPI 6.3: Ratio of students to administrative staff.	College
Initiates research funding through establishing partnerships with the industry.	KPI 6.4: Number of establishing partnerships with the industry per year	Program College
Establish mechanisms for improving interactions with industry.	KPI 6.5: Number of college's students joined training programs that contribute to society KPI 6.6: The proportional of the value of given gifts from college clients to total revenues of the college KPI 6.7: Number of employers participating in interactions with industry programs.	College
Facilitate College services directed at local industry.	KPI 6.8: Percentage of faculty members involved in external consultations and services. KPI 6.9: Proportion of faculty members formally associated with industry to the total number employed. KPI 6.10: Proportion of the number of training activities offered to the community / year.	Program College

Strategic Theme: 6. Institutional Development		
Initiatives	**Measurable Indicators**	**Level**
Launch a marketing campaign to improve the reputation of the Engineering College.	KPI 6.11: Number of reported news items about college on the various media channels such as websites, newspaper, reports, etc. per year. KPI 6.12: Proportion of reported news items about college on the university website to the total reported news. KPI 6.13: Number of articles of engineering news in national media.	College
Create a strong sense of loyalty to the Engineering College among alumni.	KPI 6.14: Proportion of alumni who participate in establishing endowed and industry chairs as well as sponsored labs with respect to the total alumni. KPI 6.15: Number of graduates participating in engineering activities.	Program College

Engineering College location, King Khalid University Map

Adminstrative Block

Warehouse

Engineering Labs and Workshops

Stadium

Mosque

College of Engineering Gate No. 3

University Canteen

Medical College

Entrance gate

0 37.5 75   150   225   300
Meters

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