Introduction and background

Overview of the higher education system

KFUPM overview

KFUPM strategy

Key research issues and initiatives

Path forward
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The universities directly negotiate their budgets with the Ministry of Finance.
The Council of Higher Education

Membership & Functions

- **Chaired by HM the King**

- **Membership consists of:** Ministers of Higher Education, General Education, Finance, Labor, Planning and Economy, Civil Service, and Rectors of the Universities

- **Functions:**
  - Ensures coordination among universities
  - Approves bylaws and guidelines for university operations.
  - Approves the creation of new institutions of higher education
  - Approves new academic colleges and units
  - Appoints Vice Rectors of Universities.
## Characteristics of the Higher Education System

### Governance

- Each University has a Board comprised of the Minister and university administrators
- Decision making tends to be centralized

### Budgeting

- 100% government funding
- Donor contributions are minimal

### Appointment of Officials

- Rectors are appointed through royal decree
- Deans are appointed by the Minister
- Chairmen are appointed by the Rector
### Characteristics of the Higher Education System

<table>
<thead>
<tr>
<th>Access</th>
<th>Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Tuition-free education and monthly stipends</td>
<td>• New colleges &amp; departments are approved by the Council of Higher Education</td>
</tr>
<tr>
<td>• Enrolment of 600,000 students with 2% in private institutions</td>
<td>• Recently approved colleges are focused on Engineering, Medicine, &amp; IT</td>
</tr>
<tr>
<td>• Approx. 60% females &amp; 40% males</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Research</th>
<th>Quality Assurance</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Funded from the University budget and KACST</td>
<td>• NCAAA ensures quality of programs to meet international standards</td>
</tr>
<tr>
<td>• Grants and contract research are funded by industry</td>
<td>• Some institutions have periodic internal/external assessments/accreditation</td>
</tr>
</tbody>
</table>
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College of Petroleum and Minerals, 1963

- 2-year technical college
- 76 students
- 14 faculty members

KFUPM now...

- More than 8,300 students (Main Campus)
- Approximately 750 faculty members
- 6 colleges (BS, MS and PhD)
- 2 Community Colleges (1500 students)
KFUPM Campus

**Facts & Figures**

- Campus area of more than 4 km² and serves over 20,000 people
- 1,100 housing units for faculty and staff
- Student dorms for 4,000 students
- Sports & other amenities
- Medical center
- Community center

*New projects with a budget of $260 MM for:*
- Housing
- Academic & Administration buildings
- Science park complex
# KFUPM Vision & Mission

## Vision

To be a vibrant multicultural University of international repute, focused on quality education and innovative research that prepares professionals and entrepreneurs to lead social, economic and technical development in the region.

## Mission

- Prepare professionals empowered with the knowledge, skills, values and confidence to take a leadership role in the development of the Kingdom in the fields of science, engineering, environmental design and business.

- Produce research that contributes to the knowledge and sustainable development of the Kingdom and region by providing innovative solutions to identified economic and technical problems and opportunities.

- Provide a stimulating campus environment for the welfare of its students, faculty and staff, and offering outstanding professional services and out-reach programs to the society at large.
KFUPM Administrative Structure

University Board

University Rector

Vice Rector for Academic Affairs
- Academic Deans

Vice Rector for Grad Studies and Sci Research
- Scientific Research
- Graduate Studies
- Library Affairs
- International Cooperation

Vice Rector for Applied Research
- Center Directors

Support Deans
- Faculty & Personnel Affairs
- Student Affairs
- Admissions & Registration
- Academic Development

Supervisors
- Financial & administration
- Technical Affairs
- Info & Comm. Technology
- Dhahran Techno-Valley
The University Board

Membership & Functions

• Chaired by the Minister of Higher Education and consists of Rector, Vice Rectors, Deans

• Functions:
  • Propose new colleges, departments, centre, etc. to be approved by the HE Council
  • Approve academic programs
  • Approve curricula, text books and teaching materials, and academic calendars
  • Approve budget allocations to departments and colleges
  • Confer degrees and honorary doctorates
  • Accept gifts & contributions to university
  • Appoint and terminate the services of faculty members and other personnel
  • Approve training sabbatical leaves, secondment, and academic missions
The University Rector

Main Responsibilities

• Appointed through a Royal decree for four-year renewable term, The University Rector carries on the following responsibilities:

• Acts as the Chief Academic and Executive Officer of the University and the Deputy Chairman of the University Board

• Recommends appointments of Vice-Rectors and Deans

• Appoints Deputy Deans and Department Chairmen for two year renewable terms

• Approves resolutions proposed by the University Scientific Council and standing committees.

• Accessible by the whole community and handles issues of varying importance.
### Academic Colleges and Departments

<table>
<thead>
<tr>
<th>Colleges of Engineering Sciences &amp; Applied Eng.</th>
<th>College of Sciences</th>
<th>College of Industrial Management</th>
<th>College of Environmental Design</th>
<th>College of Computer Sciences and Engineering</th>
<th>Community Colleges</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Aerospace</td>
<td>• Chemistry</td>
<td>• Accounting</td>
<td>• Architecture</td>
<td>• Computer Sciences</td>
<td>• Dammam Community College</td>
</tr>
<tr>
<td>• Civil</td>
<td>• Physics</td>
<td>• MIS</td>
<td>• Architectural Engineering</td>
<td>• Computer Eng.</td>
<td>• Hafr Al-Batin Community College</td>
</tr>
<tr>
<td>• Chemical</td>
<td>• Mathematical Sciences</td>
<td>• Finance &amp; Economics</td>
<td>• Construction Eng. &amp; Mangt.</td>
<td>• Systems Eng.</td>
<td></td>
</tr>
<tr>
<td>• Electrical</td>
<td>• Earth Sciences</td>
<td>• Management</td>
<td>• City &amp; Regional Planning</td>
<td>• Software Eng.</td>
<td></td>
</tr>
<tr>
<td>• Mechanical</td>
<td>• Islamic &amp; Arabic Studies</td>
<td>• Marketing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Petroleum</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Programs are periodically revised
30 BS Programs, 24 offer master degrees, and 10 offer doctorate degrees
Undergraduate Enrollment (2005/2006)

- Prep 20%
- Engineering 36%
- CS & Eng 19%
- Env Design 3%
- Sciences 1%
- Management 21%

Total undergraduate students: 7,395

Student Enrollment by Degree (2005/2006)

- PhD 4%
- MS 9.0%
- BS 90.2%
- Other 0.7%
<table>
<thead>
<tr>
<th>Year</th>
<th>Accreditation/Assessment</th>
<th>KFUPM Programs</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993</td>
<td>(ABET)</td>
<td>All Engineering programs</td>
<td>Received “substantial equivalence” until 2001</td>
</tr>
<tr>
<td>1996</td>
<td>Berkeley Team</td>
<td>All Sciences programs</td>
<td></td>
</tr>
<tr>
<td>1997</td>
<td>(UNESCO)</td>
<td>Research Institute</td>
<td></td>
</tr>
<tr>
<td>2001</td>
<td>(ABET)</td>
<td>All Engineering Science programs</td>
<td>Received “substantial equivalence” until 2008</td>
</tr>
<tr>
<td>2002</td>
<td>Association to Advance Collegiate Schools of Business (AACSB)</td>
<td>C. of Industrial Management</td>
<td>Received accreditation until 2013</td>
</tr>
<tr>
<td>2003</td>
<td>(ABET)</td>
<td>All Applied Engineering programs</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>Self-Assessment (7 Programs)</td>
<td>Program Assessment, Deanship of Academic Development</td>
<td>Received advice to prepare for upcoming accreditation</td>
</tr>
<tr>
<td>2005</td>
<td>Self-Assessment (11 Programs)</td>
<td>Program Assessment, Deanship of Academic Development</td>
<td>Received advice to prepare for upcoming accreditation</td>
</tr>
<tr>
<td>Features &amp; Highlights</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• English is the medium of instruction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• KFUPM alumni hold leading positions within government and industry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• KFUPM has the most active academic development programs in the region</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>— Faculty development</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>— E-learning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>— Assessment &amp; Accreditation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Personal skills program is initiated to enhance students employability skills</td>
<td></td>
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</tbody>
</table>
### Features & Highlights

- Implemented an ERP system
- Established an endowment fund
- Developed a comprehensive strategic plan
- Pioneered in the adoption of the International Advisory Board
- Leadership role in adoption of:
  - National Assessment and Evaluation Center
  - Preparatory year program
  - Coop program
  - Career day
- Entrusted to develop the strategic plan for higher education in the Kingdom for the next 25 years (AAFAQ project)
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KFUPM’s Five Strategic Directions

1. **Excellence in Education**
   - Identify, attract and retain world class faculty
   - Establish faculty exchange programs
   - Diversify student population and establish exchange programs
   - Create educational programs that are linked to centers of excellence

2. **Excellence in Research**

3. **University Standing & Reputation**

4. **University’s Competitive Edge**

5. **Services to Society & Community**
KFUPM’s Five Strategic Directions

1. Excellence in Education
2. Excellence in Research
3. University Standing & Reputation
4. University’s Competitive Edge
5. Services to Society & Community

- Develop joint research programs with leading technical universities
- Promote and reward collaborative research, particularly that with commercial applications
- Create research linkages with the R&D labs of multinational corporations
- Align research with the international directions and trends
**KFUPM’s Five Strategic Directions**

1. **Excellence in Education**
   - Establishment of international advisory board

2. **Excellence in Research**
   - Create alliance or sisterhood programs with the leading US and European universities

3. **University Standing & Reputation**
   - Target University’s publications in leading journals

4. **University’s Competitive Edge**
   - Hold/sponsor international conferences/workshops, and invite distinguished scholars at KFUPM

5. **Services to Society & Community**
**Establish leadership in:**

- Oil and Gas
- Refining and Petrochemicals
- Renewable Energy
- Water
- Nanotechnology

- Transform KFUPM into a global innovation hub in the selected areas by building a critical mass of researchers and research infrastructure

- Diversify sources of funding
KFUPM’s Five Strategic Directions

1. Excellence in Education
2. Excellence in Research
3. University Standing & Reputation
4. University’s Competitive Edge
5. Services to Society & Community

- Network and capitalize on KFUPM alumni
- Improve KFUPM internal community
- Establish strong interaction with external community
- Become more proactive in providing services that are of value to the society
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### Key Research Issues at KFUPM - Publications

#### Ranking in Engineering Publications (March 1st 2007)

<table>
<thead>
<tr>
<th>ESI Rank</th>
<th>No. Papers Cited</th>
<th>Institution</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>4469</td>
<td>NASA</td>
</tr>
<tr>
<td>11</td>
<td>4397</td>
<td>MIT</td>
</tr>
<tr>
<td>93</td>
<td>1591</td>
<td>Johns Hopkins University</td>
</tr>
<tr>
<td>111</td>
<td>1,503</td>
<td>KFUPM</td>
</tr>
<tr>
<td>157</td>
<td>1192</td>
<td>University of Massachusetts</td>
</tr>
<tr>
<td>215</td>
<td>935</td>
<td>Istanbul Technical University</td>
</tr>
<tr>
<td>243</td>
<td>868</td>
<td>Cairo University</td>
</tr>
</tbody>
</table>

Source: ISI ranking by number of engineering publications on 1 March 2007, 1997 – 2007

ESI: Essential Science Indicator
Three New Research Initiatives

Dhahran Techno-Valley

Strategic Areas of Excellence

International Partnership Program
Dhahran Techno-Valley Divisions

- King Abdullah Bin Abdulaziz Science Park (KASP)
- Sultan Bin Abdulaziz Science & Technology Center (SciTech)
- Technical and Business Incubator
- Dhahran Techno-Valley
- Innovation Center
- Liaison Office
- Consultancy Services Center (CSC)
Strategic Areas of Excellence

Nanotechnology
- HM The King has donated $3.2 MM for the development of a center of excellence in Nanotechnology

Renewable Energy
- The government has allocated $11 MM as startup towards this area
- KFUPM will contribute funds in the form of infrastructure and support

Refining & Petrochemicals
- The government has allocated $9 MM as startup towards this area
- KFUPM will contribute funds in the form of infrastructure and support

Water
- Saudi Arabia is the largest user of desalination technology in the world
- KFUPM expects government funds to seed this area

Upstream Oil & Gas
- KFUPM wishes to strengthen research ties between KFUPM & Aramco
- KFUPM expects government funds to seed this area
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