# برنامج الهندسة المدنية Civil Engineering

## الرؤية و الرسالة

### رؤية برنامج الهندسة المدنية

إعداد كوادر مهنية وعلمية من المهندسين في تخصص الهندسة المدنية متميزين و مبدعين في شتى مجالات الأعمال المدنية و قادرين على المنافسة داخل سوق العمل محليًا، إقليميًا وعالميًا.

Prepare professional and scientific cadres of engineers in the field of civil engineering who are distinguished and creative in various fields of civil works and able to compete within the labor market locally, regionally and globally.

### رسالة برنامج الهندسة المدنية

"تقديم مستوى تعليمي متكامل ،ذو جودة عالية في مجال الهندسة المدنية و الالتزام بالمعايير الأكاديمية، المهنية و الأخلاقية و ذلك لإعداد خريج ذو مستوى أكاديمي متميز، ومزود بمهارات تؤهله للمنافسة في سوق العمل المحلي والإقليمي، وقادرعلى البحث العلمي، ليساهم في خدمة المجتمع وتلبية احتياجاته"

“To provide an integrated and high-quality education in Civil Engineering and to achieve academic, professional and ethical standards in order to prepare a graduate with high academic level provided with skills enabling him to compete in the local and regional labor market; to conduct scientific research and to satisfy the needs of the community.”

# أهداف برنامج الهندسة المدنية – Program Aims

1) تطبيق مجموعة واسعة من المعارف الهندسية والعلوم والمهارات المتخصصة مع التفكير التحليلي والنقدي والنظامي لتحديد وحل المشاكل الهندسية في الحياة الحقيقية وفي تصميم الهندسة المدنية .
2) التصرف بمهنية والالتزام بأخلاقيات ومعايير الهندسة والعمل على تطوير المهنة والمجتمع وتعزيز مبادئ الاستدامة.
3) العمل في فريق غير متجانس و القدرة على قيادة الفريق و إظهار الصفات القيادية والمهارات الإدارية ومهارات تنظيم المشاريع.
4) استخدام التقنيات والمهارات والأدوات الهندسية الحديثة اللازمة للممارسة الهندسية وأحدث التطورات في تطبيقات الهندسة المدنية.
5) دراسة تأثير الحلول و التصميمات الهندسية على المجتمع و البيئة
6) اختيار مواد البناء والتشييد المناسبة من حيث المقاومة ،المتانة ،كفائتها في الموقع، مقاومتها للحرارة وظروف الجوية وتأثير مياه البحار والعوامل البيئية.
7) تطبيق العمليات التحليلية والتجريبية والتصميمية وهندسة البناء بإتقان بمساعدة الأدوات الهندسية الحديثة والكود التصميمي لمنشات الهندسة المدنية.
8) إتقان استراتيجيات التعلم الذاتي و التعلم المستمر للتواصل بفعالية ، باستخدام أنماط وأدوات ولغات مختلفة للتعامل مع التحديات الأكاديمية / المهنية بطريقة نقدية وإبداعية.
9) قيادة وإدارة والتواصل الفعال مع المصممين ومهندسي الموقع باستخدام أدوات ومبادئ مختلفة لتلبية متطلبات المجتمع من معايير الصحة والسلامة المهنية والجودة الهندسية.

**Program Aims:**

1) Apply a wide spectrum of engineering knowledge, science and specialized skills with analytical, critical and systemic thinking to identify and solve engineering problems in real life and in civil engineering design.

2) Behave professionally and adhere to engineering ethics and standards and work to develop the profession and the community and promote sustainability principles

3) Work in and lead a heterogeneous team and display leadership qualities, managerial skills and entrepreneurial skills.

4) Use techniques, skills, and modern engineering tools necessary for engineering practice and latest development in civil engineering applications.

5) Study the effects of engineering solutions on society and the environment.

6) Select suitable building materials in terms of strength, durability, suitability to site, temperature, weather conditions, impacts of seawater and environment.

7) Apply analytical, experimental, design, construction engineering processes with proficiency aided by modern engineering tools and the codes of practice of all civil engineering.

8)Master self-learning and life -long learning strategies to communicate effectively using different modes, tools, and languages to deal with academic/professional challenges in a critical and creative manner.

9) Lead, manage, and communicate effectively with designers and site engineers using different tools and principles to meet society's requirements of occupational health, safety, and engineering quality standards.

# Program Attributes(NARS2018)- مواصفات الخريج

1. Master a wide spectrum of engineering knowledge and specialized skills and can apply acquired knowledge using theories and abstract thinking in real life situations;

2. Apply analytic critical and systemic thinking to identify, diagnose and solve engineering problems with a wide range of complexity and variation;

3. Behave professionally and adhere to engineering ethics and standards;

4. Work in and lead a heterogeneous team of professionals from different engineering specialties and assume responsibility for own and team performance;

5. Recognize his/her role in promoting the engineering field and contribute in the development of the profession and the community;

6. Value the importance of the environment, both physical and natural, and work to promote sustainability principles;

7. Use techniques, skills and modern engineering tools necessary for engineering practice;

8. Assume full responsibility for own learning and self-development, engage in lifelong learning and demonstrate the capacity to engage in post- graduate and research studies;

9. Communicate effectively using different modes, tools and languages with various audiences; to deal with academic/professional challenges in a critical and creative manner;

10. Demonstrate leadership qualities, business administration and entrepreneurial skills.

# Matrix: Graduate Attributes with Program Aims

# مصفوفة أهداف البرنامج مع مواصفات الخريج

| Graduate Attributes | Program Aims |
|---|---|
| 1. Master a wide spectrum of engineering knowledge and specialized skills and can apply acquired knowledge using theories and abstract thinking in real life situations; | 1) Apply a wide spectrum of engineering knowledge, science and specialized skills with analytical, critical and systemic thinking to identify and solve engineering problems in real life and in civil engineering design. |
| 2. Apply analytic critical and systemic thinking to identify, diagnose and solve engineering problems with a wide range of complexity and variation; | |
| 3. Behave professionally and adhere to engineering ethics and standards; | 2) Behave professionally and adhere to engineering ethics and standards and work to develop the profession and the community and promote sustainability principles |
| 4. Work in and lead a heterogeneous team of professionals from different engineering specialties and assume responsibility for own and team performance; | 3) Work in and lead a heterogeneous team and display leadership qualities, managerial skills and entrepreneurial skills. |
| 5. Recognize his/her role in promoting the engineering field and contribute in the development of the profession and the community; | 4) Use techniques, skills, and modern engineering tools necessary for engineering practice and latest development in civil engineering applications. |
| 6. Value the importance of the environment, both physical and natural, and work to promote sustainability principles; | 5) Study the effects of engineering solutions on society and the environment. |
| | 6) Select suitable building materials in terms of strength, durability, suitability to site, temperature, weather conditions, impacts of seawater and environment. |
| 7. Use techniques, skills and modern engineering tools necessary for engineering practice; | 7) Apply analytical, experimental, design, construction engineering processes with proficiency aided by modern engineering tools and the codes of practice of all civil engineering. |
| 8. Assume full responsibility for own learning and self-development, engage in lifelong learning and demonstrate the capacity to engage in post- graduate and research studies; | 8)Master self-learning and life -long learning strategies to communicate effectively using different modes, tools, and languages to deal with academic/professional challenges in a critical and creative manner. |
| 9. Communicate effectively using different modes, tools and languages with various audiences; to deal with academic/professional challenges in a critical and creative manner; | 9) Lead, manage, and communicate effectively with designers and site engineers using different tools and principles to meet society's requirements of occupational health, safety, and engineering quality standards. |
| 10. Demonstrate leadership qualities, business administration and entrepreneurial skills. | |

## Program Mission

"To provide an integrated and high-quality education in Civil Engineering and to achieve academic, professional and ethical standards in order to prepare a graduate with high academic level provided with skills enabling him to compete in the local and regional labor market; to conduct scientific research and to satisfy the needs of the community."

| Program Mission | Program Aims |
|---|---|
| To provide an integrated and high-quality education | 1) Apply a wide spectrum of engineering knowledge, science and specialized skills with analytical, critical and systemic thinking to identify and solve engineering problems in real life and in civil engineering design. |
| ….to achieve academic, professional and ethical standards | 2) Behave professionally and adhere to engineering ethics and standards and work to develop the profession and the community and promote sustainability principles |
| … to prepare a graduate with high academic level provided with skills enabling him to compete in the local and regional labor market | 3) Work in and lead a heterogeneous team and display leadership qualities, managerial skills and entrepreneurial skills. |
| | 4) Use techniques, skills, and modern engineering tools necessary for engineering practice and latest development in civil engineering applications. |
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| … to prepare a graduate with high academic level provided with skills enabling him to compete in the local and regional labor market | 6) Select suitable building materials in terms of strength, durability, suitability to site, temperature, weather conditions, impacts of seawater and environment. |
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| | 8)Master self-learning and life -long learning strategies to communicate effectively using different modes, tools, and languages to deal with academic/professional challenges in a critical and creative manner. |
| | 9) Lead, manage, and communicate effectively with designers and site engineers using different tools and principles to meet society's requirements of occupational health, safety, and engineering quality standards. |