**Jerash University جامعة جرش**



**Faculty of Engineering كلية الهندسة /قسم هندسة العمارة**

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| **الانشاءات الخرسانية والمعدنية**  **0903503**  **وصف المساق** Design of structural steel elements found in bridges andBuilding structures, including plate girders, other built-up members, beams and slenderColumns;, and connections.; detailing of steel structures; design sessions. **Introduction to limit-state design of reinforced concrete structure. Loads and load combinations acting on reinforced concrete structures. Analysis and design of rectangular beams and one-way slabs-beam, doubly-reinforced beams. Bond and development length of reinforcement. Deflections and cracks. Design and analysis of columns subject to axial load and bending..**    **Review of design basis, ultimate strength versus unified design approaches, tension-**  **and compression-controlled members, strain limits. Serviceability analysis, deflection**  **and cracking control, shrinkage and creep deflection. Analysis and design for torsion.**  **Slender columns. Analysis of building frames, simplifications, idealization.**  **Two-way slabs, column-supported slabs, direct design method, equivalent frame**  **Method. Design of stairs**. |

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