



Jordan University of Science and Technology
Faculty of Engineering
Aeronautical Engineering Department

Course name and number:

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| AE204 Solid Modeling |
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Credit, contact hours and categorization:

| Credit and contact hours | Contact hours | Categorization |
|--------------------------|-------------------------------|-------------------|
| 2 Credit Hours | 2 days a week, 3 hours Lab | Engineering Topic |

Instructor's or course coordinator's name:

| | |
|-----------------|------------------------|
| Name | Dr. MUATH BANI HANI |
| Office location | N1-L2 |
| Email address | mabanihani@just.edu.jo |

Textbook and other supplemental materials:

| Textbook | | | |
|---|------------------------------------|-------------------------|-------------------|
| Title | Graphics Science and Design | | |
| Author(s) | French T E, Vierck C J, Foster R J | | |
| Edition | 4 th Edition | | |
| Other Information | McGraw-Hill's | | |
| References | | | |
| Book Name | Author(s) | Edition | Other Information |
| Pro/Engineer Wildfire 5.0 Instructor | David S. Kelley | 1 st Edition | McGraw-Hill's |

Course information:

| Course Catalogue | | |
|--|----------------------------------|----------------------|
| Study of parametric solid modeling as a design/drawing tool using software such as Pro-Engineer, Topics include creation of three-dimensional solid models, assemblies, and renderings, as well as generation of two-dimensional technical drawings from three-dimensional models. | | |
| Course type : This course is required to fulfill the program. | | |
| Prerequisites or co-requisites | | |
| Line Number | Course Name | Prerequisite Type |
| 252000 | ME200 Engineering Drawing (A) | Prerequisite / Study |



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Specific goals of the course :

| Specific outcomes of instruction and the student outcomes (SO) mapping | | |
|--|----------------|-------------------------------------|
| Outcomes | SO Mapping | Course Outcome Weight (Out of 100%) |
| Model the 3 D geometric information of machine components including assemblies, and automatically generate 2 D production drawings. | 10SO 2, 10SO 8 | 20% |
| Improve visualization ability of machine components and assemblies before their actual fabrication through modeling, animation, shading, rendering, lighting, and coloring. | 5SO 1, 15SO 5 | 20% |
| Understand the possible applications of the CAD systems in motion analysis, structure analysis, optimization, rapid prototyping, reverse engineering, and virtual engineering. | 10SO 1, 10SO 8 | 20% |
| Use full-scale CAD software systems designed for geometric modeling of machine components. | 10SO 1, 10SO 8 | 20% |
| Enhance the student's graphical communication skills. | 20SO 3 | 20% |

Brief list of topics to be covered:

| Tentative List of Topics Covered | | |
|----------------------------------|---|--------------------|
| Weeks | Topic | References |
| Weeks 1-4 | Basics of Engineering Drawing | Textbook and Ref 1 |
| Week 5 | Pro/ENGINEER's User Interface | Textbook and Ref 1 |
| Week 6 | Constraint-Based Sketching | Textbook and Ref 1 |
| Week 7 | Constraint-Based Sketching | Textbook and Ref 1 |
| Week 8 | Extruding, Modifying, and Redefining Features | Textbook and Ref 1 |
| Week 9 | Feature Construction Tools | Textbook and Ref 1 |
| Week 10 | Revolved Features | Textbook and Ref 1 |
| Week 11 | Feature Manipulation Tools | Textbook and Ref 1 |
| Week 12 | Creating a Pro/ENGINEER Drawing | Textbook and Ref 1 |
| Week 13 | Sections and Advanced Drawing Views | Textbook and Ref 1 |
| Week 14 | Swept and Blended Features | Textbook and Ref 1 |
| Week 15 | Advanced Modeling Techniques | Textbook and Ref 1 |
| Week 16 | Assembly Modeling | Textbook and Ref 1 |