Mechanical and Industrial Engineering Syllabi   NJIT Syllabi

Fall 2019

FED 101-HM1: Fundamentals of Engineering Design

Swapnil Moon

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FED-101

COURSE OUTLINE

Instructor: Dr. Swapnil Moon   Office: 333 CD
                  Phone: 201-665-2223   E-mail: swapnil.moon@njit.edu
Office Hours: Wednesday 11:30 to 12:45 P.M and by appointment

References:
1. FUNDAMENTALS OF GRAPHICS COMMUNICATION by Gary R. Bertoline, Eric N. Wiebe et al. ISBN: 978-0-07-352263-0 (0-07-352263-5); 6th Edition, McGraw Hill 2010.
2. Creo Parametric 4.0 Tutorial by Roger Toogood ISBN: 978-1-63057-091-0, Schroff Development Corporation 2017

Course Description:
- Study technical graphics and the computer as a technical drawing tool;
- Introduction to projections and multi-view drawings and visualization;
- Discuss geometry commonly used in engineering design graphics, orthographic projections;
- Dimensioning techniques, tolerance and introduction to auxiliary and sectional views;
- Apply software program Creo Parametric 6.0 (previously known as Pro/Engineer/Wildfire) to various problems.

Grading Scheme:

Class Exercises (Attendance)	5 points each session	60 points
Lab Exercises	20 points each session	240 points
Assignments	50 points each week	600 points
Two Exams	100 points each	200 points
Final Project		500 points
		Total 1600 points

Course Policies:
1. Attending class, completing assignments on time, and keeping up with the class material is important for success in this course and in college. Generally, late or missed assignments **will not** be accepted except for legitimate (**pre-approved when possible**) reasons as determined by the instructor. Examples of legitimate reasons are: illness, death in family, etc. **The method of handling late or missed work is determined by the instructor.**
2. Final Project – Students will perform a final project on one of the selected design topics. The projects will focus on design, 3D CAD modeling of parts and assemblies, synthesis, analysis, and building prototypes using 3D printer/laser cutter.
3. **ANY FORM OF CHEATING ON ASSIGNMENTS OR EXAMS WILL RESULT IN AN "F" FOR THE COURSE**. This includes looking at another person's exam or copying another person's work for exams or assignments.
4. The student who compromised as well as the student who allowed will **BOTH** be awarded the **SAME** penalty.
5. NJIT honor code will be used for all situations that involve cheating, copying, misrepresentation of student work, and misrepresentation of student information and any

       violations will be brought to the immediate attention of the Dean of Students (visit http://www.njit.edu/academics/honorcode.php.)

6. All the class and lab exercises are to be turned in by the end of the class on Canvas.

7. All class exercises, lab exercises, and assignments must also include submission of an electronic file. The file must be submitted by the due date via **Canvas**. The files must be named **jdoe_class_ex_XX**.prt, **jdoe_lab_ex_XX**.prt , or **jdoe_assignment_XX**.prt (or other appropriate file extension that is correct for the type of assignment).XX represents the exercise or assignment number.

8. Weekly assignments are due **BEFORE** the start of Lecture. Assignments turned in after the lecture starts are **late and will count as completed assignments but are worth 0 points.**

9. Class exercises and lab exercises are due at the end of the class unless the instructor has given an extension. Exercises turned in after the class has ended or the extended deadline are late and count as a completed assignment but are worth 0 points.

10. Students may not have missed more than a total of three weekly assignments to pass the course. A missing assignment can be submitted late for completion credit but will be given a grade of zero. **ONCE THREE ASSIGNMENTS ARE MISSING, ALL ASSIGNMENTS AND EXERCISES MUST BE COMPLETED TO PASS THE COURSE!!!**

11. Students may not have missed more than a total of ten exercises and assignments to pass the course. Missing exercises and assignments can be submitted late for completion credit but will be given a grade of zero. **ONCE A TOTAL OF TEN ASSIGNMENTS AND EXERCISES ARE MISSING, ALL ASSIGNMENTS AND EXERCISES MUST BE COMPLETED TO PASS THE COURSE!!!**

12. **If a student misses or receives a zero for five weekly assignments the grade for the class is F.**

13. The student must ask the instructor for special allowances associated with disabilities.

14. For any modifications or deviations from the syllabus throughout the course of the semester, instructor will consult with students and the students must agree to.

15. While the professor is discussing the lecture, all monitors should be turned off. If anyone caught typing or browsing internet, the student will be asked to leave the class for the day and this will count as an absence.

16. **Cell Phone use or Texting** during class is **NOT** allowed. If you have to use your cell phone please step out of the class and come back in after you are done.

17. Taking the Mid Term Exam is mandatory to receive a final grade in the course.

18. Reasonably equal Team Participation in Team Project is required for a grade

19. Unequal Team Participation in Team Project will affect the grade of ALL the members of a team

Mechanical and Industrial Engineering Department
FED101 FUNdamentals of Engineering Design   **2 Credits**

Tentative Syllabus

Week	Topic
1	Policies, Creo Introduction, Definitions, Basic Skills
2	Datums, Holes, Sketching, Extruding, References, Constraints
3	Datums, Extrude, Constraints, History Tree, Project Tool, Rounds and Fillets
4	Datums, Relations, Sketching, Constraints, Patterns, History Tree
5	Datums, Sketching, Revolve, Patterns, Relations
6	Sketching, Patterns, Mirror, Lettering
7	Blends
8	2D Sweeps, Shell, Rib
9	Helical Sweeps, Sweep-Blends, 3D Sweeps
10	Assemblies
11	Assemblies, Animation
12	Multi-View Drawings, Section Views, & Dimensioning
13	Multi-View Drawings, Section Views, & Dimensioning
14	**Final Exam & Showcase**