

**EML 3500 Mechanical Design I**  
**Summer 2011**

**Project 1**

**Addressing Contemporary Engineering Problems by Teams:  
Team Survey, Conceptual Design, Team Report and Team Presentation**

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Submit the Report, PowerPoint and Presentation Movie File to  
[fiumechdesign@gmail.com](mailto:fiumechdesign@gmail.com)

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**Assigned: May 9, 2011 • Due: May 23, 2011**

<b>Number</b>	<b>Topic</b>
1	Hybrid Cars
2	Solar Energy
3	RoboCup Competition: Review, Challenges, Opportunities
4	Unmanned Ground Vehicles (UGV)
5	Wind Energy
6	Shell Eco-Marathon Competition
7	Unmanned Aerial Vehicles (UAV)
8	Current Practices and Future of SUV Design
9	Six Sigma
10	Micro Electro-Mechanical Systems (MEMS)
11	Ocean Wave Energy
12	Robotics Technology in the Military
13	Nanotechnology
14	Electric Cars
15	Fuel Cells
16	Boeing 707 to 787 Aircraft Design
17	Bio Fuels
18	Intelligent Vehicle Technology
19	Global Learning Initiative
20	Engineers Without Borders: Overview and Case Studies
21	Friction Stir Welding (FSW)
22	Composite Materials
23	Tweel: The New Tire
24	Segway RMP Series Mobile Robot Platforms
25	SAE Aero Design East Competition

**Each team will be assigned one of the topics shown in the table above. Teams will then be responsible for the following tasks:**

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1. Divide member responsibilities and document it.
2. Carry out literature survey on your topic. If relevant, develop and propose conceptual design(s) supported by SolidWorks drawings. Proposed design should attempt to improve existing designs, and clearly identify the intended improvements. No structural design backed up by engineering calculations is required for this project.
3. Review the Style Guide for Technical Writing document available at the course site: <http://www.eng.fiu.edu/mme/robotics/EML3500MechDesign/>  
Strictly follow the rules outlined in the guideline in your report.
4. Prepare a team report using Senior Design Report format (Include as many relevant sections as possible including introduction, ethics statement, literature survey, background (historical review), current designs, possible future developments, your conceptual designs, discussion and conclusion, references).  
Senior Design Report format can be found at the following link: <http://www.eng.fiu.edu/mme/robotics/EML3500MechDesign/>
5. Prepare a PowerPoint presentation file for a 10-minute team presentation.
6. Practice team presentations at least three times and make sure each member's section is clearly defined and sections flow logically.
7. Record your team presentation in a LIGHTED ROOM showing the presenter and PowerPoint slides in the background.
8. Prepare a video of the presentation in avi or wmv format. In case the team cannot record the video together, recording must be coordinated so that the same PowerPoint file is used by all members, and individual presentation segments are integrated into a single movie file. Note that only one movie file per team may be submitted. Teams that submit more than one integrated movie file will receive zero for the video segment of the project.
9. Each team will email the followings: (1) Report, (2) PowerPoint file, and (3) Presentation video to [fiumechdesign@gmail.com](mailto:fiumechdesign@gmail.com)
10. Make sure the project title, student names, and team number are written on report's cover page, first slide of PowerPoint file, and at the beginning of the presentation movie.
11. Submit your report to [www.turnitin.com](http://www.turnitin.com) to receive a similarity index that should be less than 10%. Use the following information to login:  
Assignment: Summer 2011 EML 3500 Project 1  
Course ID: 3137007 and Password: MechDesign1  
Make sure only one person submits the report for your team.