**Tentative Course Schedule          EGR110 Engineering Graphics (Section D01B TR 8:30-10:20am, Spring 2015)**

| Week | Dates | Topics<br>- Also see Group Design Project PowerPoint presentation for additional key dates<br>- Also see Due Dates Table for additional key dates | Assignments (all assignments due in one week) |
|---|---|---|---|
| 1 | T, Jan 13<br><br>R, Jan 15 | <u>Sketching1</u>:  Line types, multi-view drawings, 2-view, 3-view, 6-view layouts<br><br><u>Inventor1</u>:  Introduction, Inventor menus, file types, constraints, dimensions, lines, circles, zoom and pan, extrusion, browser, printing sketches | Sketching HW #1<br><br>Inventor HW #1 |
| 2 | T,  Jan 20<br><br>R,  Jan 22 | <u>Sketching2</u>:  Isometric drawings, Discuss perspective views<br><br><u>Inventor2</u>: 11 Geometric constraints , editing trim tools, Adding extruded features (additional sketches), sketch planes, extrusion (cut, union) | Sketching HW #2<br><br><br><br>Inventor HW #2 |
| 3 | T, Jan 27<br><br><br><br>R, Jan 29 | <u>MATLAB1</u>:  MATLAB environment; windows in MATLAB, Vectors and scalars, variable names, expressions in MATLAB, order of operations, functions, formatting, clearing the screen, clearing memory, re-executing commands<br><br><u>Team Project</u>:  Presentation on the Engineering Design Process, teamwork, presentations, reports.  Discuss the design project for this semester.<br>• <u>Team Step 1</u>:  Form teams today (signup sheet will be passed around and Bb groups formed).  Brainstorm for ideas with team members.<br>• <u>Team Step 2</u>:  Initial sketches and Gantt Chart due in one week.  Also post in the Bb File Exchange. | MATLAB HW #1<br><br><br><br><br><br><br>Team Step 1<br>Team Step 2 |
| 4 | T, Feb 3<br><br><br>R, Feb 5 | <u>Inventor3</u>:  Drawing files, base views, projected views, retrieving dimensions, annotating drawings, printing<br><br><u>Sketching3</u>:  Isometric drawings, missing line/missing view problems | Inventor HW #3<br><br><br>Sketching HW #3 |
| 5 | T, Feb 10<br><br><br><br>R, Feb 12 | <u>Inventor4</u>:  Sketched features versus placed features.  Hole (depth, thru all, threads, etc), Chamfer, rounds and fillets, threads. Revolved features, symmetrical Features – Circular and rectangular patterns.  Centerlines and diametric dimensions.  Discussion of wheel designs for team project (Team Step 4).<br><br><u>MATLAB2</u>:  Scripts files (.m files), Changing the current directory, Input command, formatting outputs, Writing MATLAB programs. | Inventor HW #4<br>(Team Step 4)<br><br><br><br>MATLAB HW #2 |
| 6 | T, Feb 17<br><br><br>R, Feb 19 | <u>Sketching4</u>:  Dimensioning<br><br><u>Team Step 3 - Parts Provided</u>: Divide up parts provided (motor, battery, switch, battery clip, etc) and create Inventor models of each.  Adjust mass to correct value.  Post in File Exchange for the group. | Sketching HW #4<br><br><br>Team Step 3 |
| 7 | T, Feb 24<br><br>R, Feb 26 | <u>Sketching5</u>:  Dimensioning<br><br><u>Inventor5</u>:  Work planes – XY, YZ, ZX work planes, offset work planes<br>Swept features – two sketches required (path and profile) | Sketching HW #5<br><br>Inventor HW #5 |
| 8 | T, Mar 3<br><br><br><br>R, Mar 5 | <u>MATLAB3</u>:  Dot operations, Tables and graphs, Formatting<br><u>Team Step 5</u>:  Submit wheels for 3D printing<br><u>Team Step 6</u>:  Work on additional cable car parts during Weeks 8-11<br><br><u>Sketching6</u>:  Sectional views (full sections) | MATLAB HW #3<br>Team Step 5<br><br><br>Sketching HW #6 |
| | *Mar 8-14* | ***Spring Break.  No TCC classes.*** | |
| 9 | T, Mar 17<br><br><br><br>R, Mar 19 | <u>Inventor6</u>:  Parametric modeling –geometric and dimensional constraints.  Fully constrained parts, Auto Dimension, fixing points, driven dimensions.  Parametric relations – dimension variables & equations.<br><br>**Test**:  Based on Sketching HW #1-5 and related notes. | Inventor HW #6<br><br><br><br>Sketching **Test** |
| 10 | T, Mar 24<br><br>R, Mar 26 | <u>MATLAB4</u>:  Conditional control:  branching structures, Relational and logical operators<br><u>Team Step 7</u>:  Construction and Testing during Weeks 10-14.<br><br><u>Sketching7</u>:  Sectional views (half sections, offset sections) | MATLAB HW #4<br><br><br>Sketching HW #7 |
| 11 | T, Mar 31<br>R, Apr 2 | <u>Inventor7</u>:  Assemblies.  Selecting the base part, placing parts, assembly constraints, degrees of freedom, exploded views.  Assembly drawings – parts lists, materials, iProperties, balloons.<br><br><u>MATLAB5B</u>:  User-defined functions, symbolic math | Inventor HW #7<br><br><br><br>MATLAB HW #5B |
| 12 | T, Apr 7<br><br><br><br>R, Apr 9 | <u>Inventor8</u>:  More on assemblies.  Mass properties of solids.  Center of gravity, volume, density, weight, moments of inertia, etc.  Available materials in Inventor.  Specifying new types of materials.  Substitute assignment related to group project may be used (to be announced later)<br><br><u>Team Step 8</u>:  Perform "Static Test" during class | Inventor HW #8<br><br><br><br><br>Team Step 7 |
| 13 | T, Apr 14<br><br><br>R, Apr 16 | <u>Inventor9</u>:<br>Sectional views.  Full, half, aligned, offset sections.  Editing sectional views.<br><br><u>Design Project</u>:  Continue working on cable cars | Inventor HW #9 |

| 14 | T, Apr 21 | Inventor9:  continued… | |
| | R, Apr 23 | Team Step 9:  Submit Inventor Assembly and all related drawings (in File Exchange and printouts) | Team Step 9 |
| 15 | T, Apr 28 | Team Step 10:  - Competition Day! | Team Step 10 |
| | R, Apr 30 | Team Step 11:  - Team Presentations | Team Step 11 |
| 16 | T, May 5 | No final exam, but exam period may be used for design projects if necessary (to be determined) | |