

ME 1403 Engineering Practice & Graphics

Lecture 20

Chapter 15

Instructor:

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	Date	CHAPTERS	IN-CLASS TUTORIALS	Exams (Wednesday)	Project Schedule (Assignment)	Submission (Sunday)
Week 1	Aug 20 – 26					
Week 2	Aug 27 – Sep 2	Chapter 2	Tut: 2, 3, 4, Ex:3			
Week 3	Sep 3 – 9	Chapter 3	Tut: 2, 3 Ex:3	Quiz 1 (Sketches, Chapter 2,3)		
Week 4	Sep 10 – 16	Chapter 4	Tut: 1, 2 Ex: 1			
Week 5	Sep 17 – 23	Chapter 5	Tut: 1,3	First Midterm Exam (Chapter 2-4)		
Week 6	Sep 24 – Sep 30	Chapter 6	Tut: 2, 3 Ex:1		Introduction Assignment 1: Forming Project Group	No Submission this week
Week 7	Oct 1 – 7	Chapter 7	Tut: 1, 2 Ex: 1	Quiz 2 (Part Design, Chapter 5 & 6)	Assignment 2: Blueprint/Draft Vehical Dimension Submission	Assignment 1: Submission
Week 8	Oct 8 – 14	Chapter 8	Tut: 1, 3 Ex:3		Part 1	Assignment 2: Submission
Week 9	Oct 15 – 21	Chapter 9	Tut: 2, 3 Ex:2	Quiz 3 (Part Design, Chapter 7 & 8)	Part 2	Part 1: Submission
Week 10	Oct 22 – 28	Chapter 12	Tut: 1		Part 3	Part 2: Submission
Week 11	Oct 29 – Nov 4	Chapter 12	Tut: 2 Ex: 3	Second Midterm Exam (Chapter 5-9)	Part 4	Part 3: Submission
Week 12	Nov 5 – 11	Chapter 13	Tut: 1,2 Ex:1		Part 5	Part 4: Submission
Week 13	Nov 12 – 18	Chapter 14	Tut: 1,2 Ex:1	Quiz 4 (Assembly, Chapter 12 & 13)	Assembly Status & Discussion on Report	Part 5: Submission
Week 14	Nov 19 – 25	Chapter 15	Tut: 1,2 Ex:1		Assembly Status & Discussion on Presentation	
Week 15	Nov 26 – Dec 2	Rendering		Final Project Presentation - November 28th and November 29	Project Full Package Submission (Report, Presentation, Part files, Assemblies and Drawings)	
Week 16	Dec 3 – 9	Final Exam: Monday and Tuesday -December 3 & December 4.				

Important Dates!

- Final Project Presentation:
 - November 28th &
 - November 29th.
- Project Parts, Assembly, Drawing and Report Submission:
 - December 2nd. **(No Extension!)**
- Final Exam
 - December 3rd &
 - December 4th.

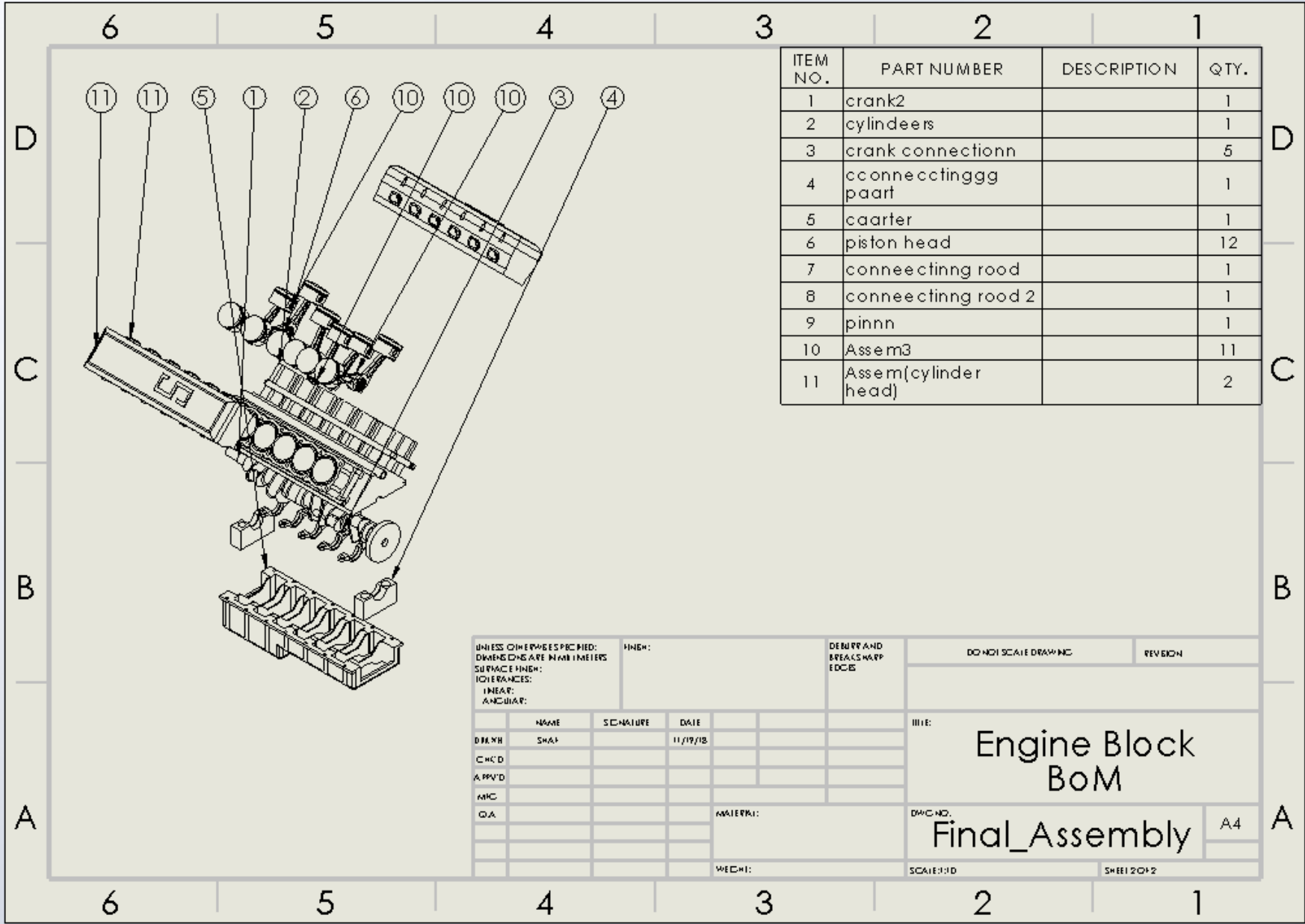
Presentation

- **Presentation Points:**
 - Abstract.
 - Inspiration.
 - Concept Drawing/Blue Print.
 - Problem Formulation.
 - Assembly & Part distribution, Problems you might have faced/ Parts needing re-dimensioning.
 - Lessons learned.
 - **Anything you want to include!**
 - Final assembly (Rendered or Screenshot)
 - Conclusion
- **Showcase:**
 - Final Assembly in Solidworks!

Project Grading Rubrics

- **Presentation**
 - Presentation Quality, Content, Design.
 - Understandable Presentation (Clarity, coherence).
 - All required components of the project being present!
 - Answer to questions?
- **Report**
 - Check the template uploaded in Blackboard
- **Solidworks Submission** (Submit everything in one zip folder! If you don't know how to do it, please check previous lectures!)
 - All Part Files
 - Assembly Files (**Remember all part files must be in the same folder as assembly otherwise, I won't be able to open it!**)
 - Drawing file (Only for the Assembly): **2 Required! (PDF format)**
 1. Final Assembly (Front, Right, Top and Isometric).
 2. Exploded Final Assembly with **Balloon Callout** and **Bill of Material!**

Sample Final Drawing File



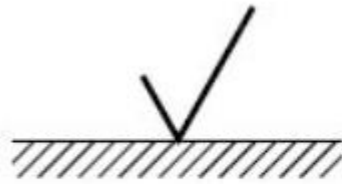
Outline

- Topics
 - Annotation
 - Surface Finish
 - Hole Callout
 - Balloon Callout
 - Revision Cloud
 - Bill of Materials
- Home Works (**Will be Graded**)
 - Tutorial 1
 - Tutorial 2
 - Exercise 1

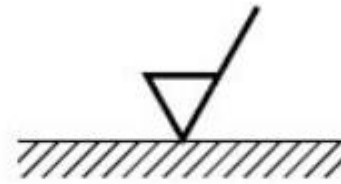
Reminder:

1. Save your file as PDF.
2. Edit Sheet Description Before submitting.

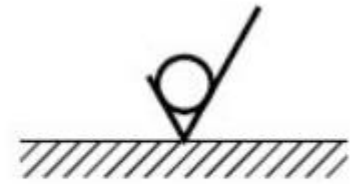
Surface Finish



Symbol indicating the surface



Symbol indicating a surface that requires material removal



Symbol indicating a surface that does not require material removal

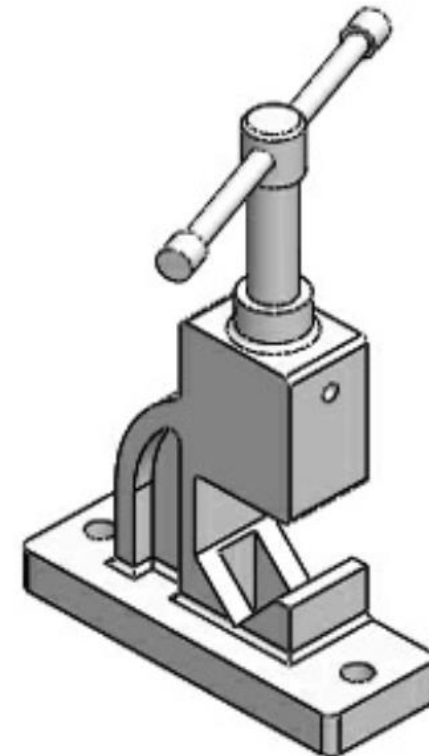
		<p>EXAMPLE</p>
<p>BASIC SURFACE TEXTURE SYMBOL</p>		<p>MAXIMUM WAVINESS SPACING RATING (C). SPECIFY IN INCHES OR MILLIMETERS. HORIZONTAL BAR ADDED TO BASIC SYMBOL.</p>
<p>ROUGHNESS AVERAGE VALUES (A). SPECIFY IN MICROINCHES, MICROMETERS, OR ROUGHNESS GRADE NUMBERS.</p>		<p>LAY SYMBOL (E)</p>
<p>MAXIMUM AND MINIMUM ROUGHNESS AVERAGE VALUES (A), SPECIFY IN MICROINCHES, MICROMETERS, OR ROUGHNESS GRADE NUMBERS.</p>		<p>ROUGHNESS SAMPLING LENGTH OR CUTOFF RATING (D). WHEN NO VALUE IS SHOWN USE .03 INCH (0.8 MILLIMETERS).</p>
<p>MAXIMUM WAVINESS HEIGHT RATING (B) SPECIFY IN INCHES OR MILLIMETERS. HORIZONTAL BAR ADDED TO BASIC SYMBOL.</p>		<p>MACHINING ALLOWANCE (F). SPECIFY IN INCHES OR MILLIMETERS.</p>

NOTE: WAVINESS IS NOT USED IN ISO STANDARDS.

Tutorial 1 (Will be Graded)

In this tutorial, first you will open the drawing created in Tutorial 2 of Chapter 12 and then-

1. Generate dimensions and add annotations to it.
2. Change the display of the front and the right view to make hidden lines visible.
3. Finally, you will change the display of the isometric view to the shaded mode



Exercise 1 (Will be Graded)

Generate the isometric view of the exploded view of the assembly created in Tutorial 1 of Chapter 13 on the standard A4 sheet format.

1. The scale of the view will be 1:5.
2. Generate the BOM and
3. Add balloons to the assembly view

ITEM NO.	QTY.	PART NO.	DESCRIPTION
1	1	mask-rod	
2	1	plb-a	
3	1	plb-a-pl	
4	1	rod-b-st-upper	
5	1	mask-rod-bearing	
6	2	plb-a-pl-pig	
7	4	plb-a-rod-rod-rod-assembly	
	1	rod-b-st-rod	
	1	plb-a	
	4	plb-a-rod	
	2	plb-a-pl-pig	
	1	plb-a-pl	
	1	rod-b-st-upper	
	1	rod-b-st-lower	
8	4	plb-a	
9	4	plb-a-rod	

The diagram shows an exploded view of a mechanical assembly. It consists of a central hub with four arms extending outwards. Each arm has a cylindrical component at its end. The assembly is shown in a perspective view, with various parts separated to show their relative positions. Balloons numbered 1 through 9 point to specific components: 1 points to a central rod, 2 to a small cylindrical part, 3 to a larger cylindrical part, 4 to a rod, 5 to a bearing, 6 to a small cylindrical part, 7 to a rod, 8 to a small cylindrical part, and 9 to a larger cylindrical part.

DATE	BY	REVISION	DATE	BY	REVISION

test A4

Submission Rules

- Homework's are due **at the Sunday 11.59 P.M.** of the following week (*More Discussion on next class*).
- Submit everything via **Blackboard**.
- Copying your assignments are **prohibited**. If you do so, you and the individual you copied from will receive a **grade zero**, plus both of you will be referred for actions as described in the university's policy for academic dishonesty. ([Read Section 203 of the Student Code of Conduct 2013-2013 UTSA Information Bulletin.](#))