

ENG 004 Lecture 12, Nov 6, 2012

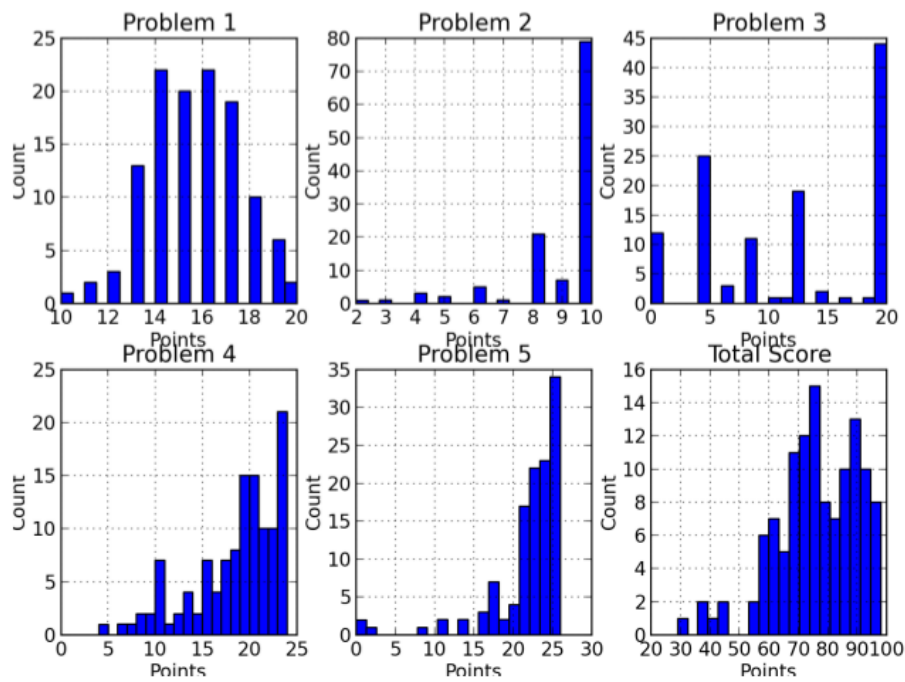
Announcements

- Midterm grades are posted
- Lecture schedule updated
- Homework #5 available after class
- Homework submission changes
- Office hours

Topics

- 3D Constraints: sketch planes/assemblies
- Projection theory

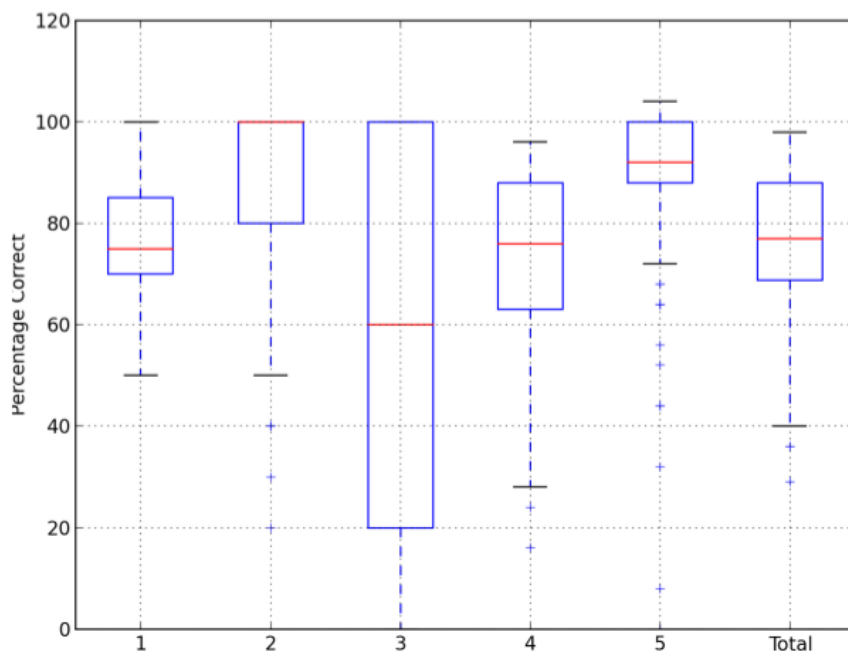
Midterm Overview - Histogram



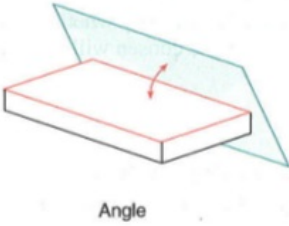
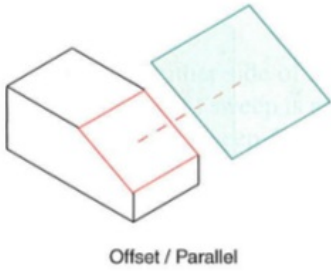
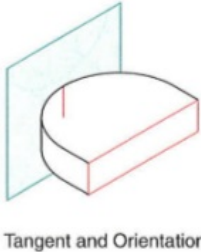
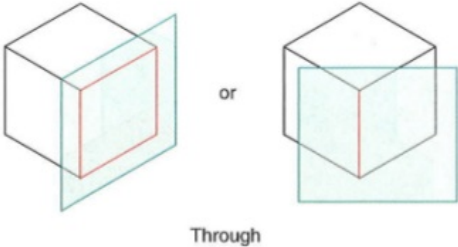
Midterm Overview - Stats

	Mean	Std	Median	Max	Min
Problem 1	15.450000	1.982486	15	20	10
Problem 2	9.041667	1.692275	10	10	2
Problem 3	11.633333	7.368948	12	20	0
Problem 4	18.141667	4.654980	19	24	4
Problem 5	21.975000	4.785241	23	26	0
Total Score	76.241667	14.272849	77	98	29

Midterm Overview - Box Plots



Sketch Plane Orientation



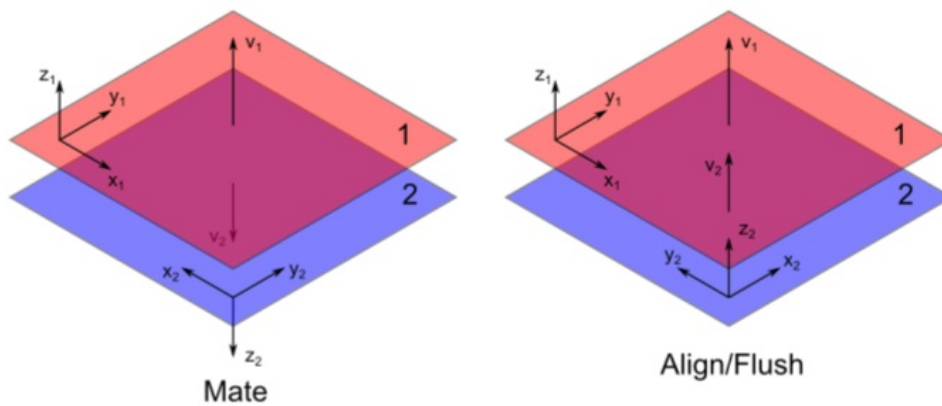
Assembly Constraints

Mate

Two surfaces associated with different objects are set coplanar with directional vectors in opposing directions

Align (Flush)

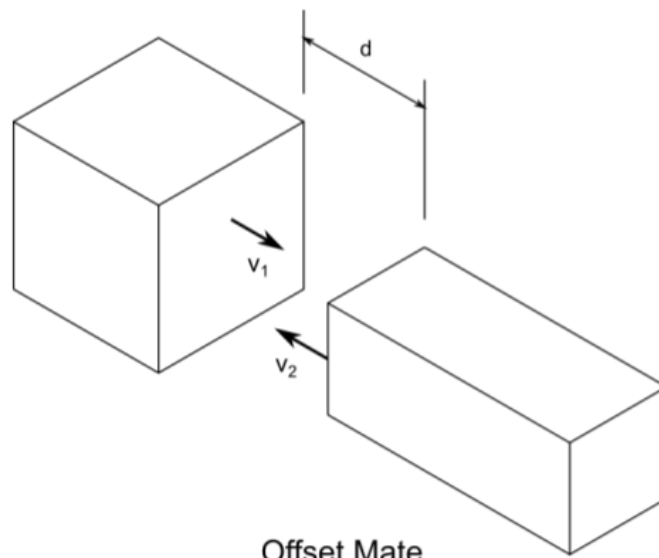
Two surfaces associated with different objects are set coplanar with directional vectors in the same direction



Assembly Constraints

Offset

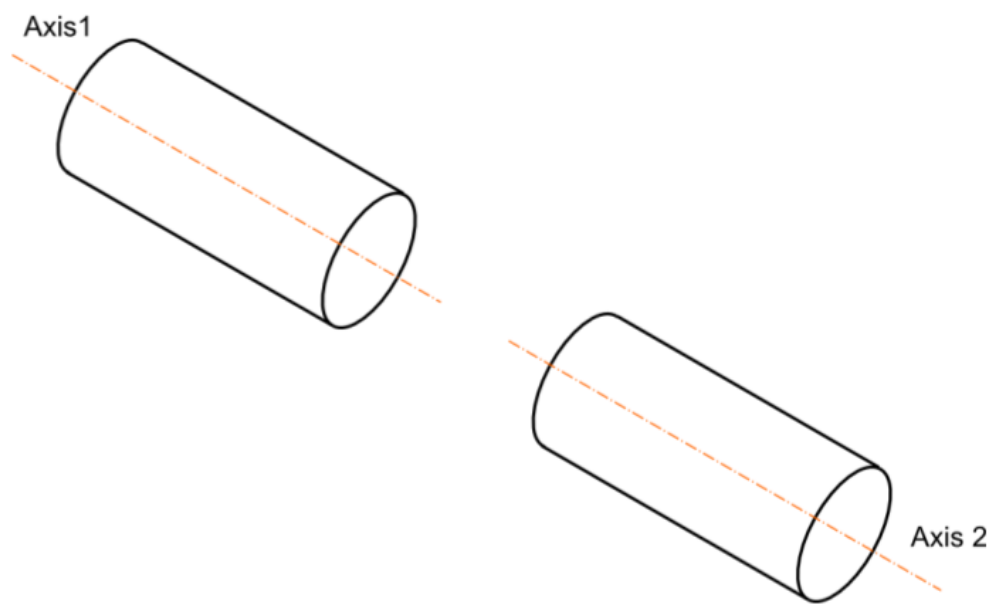
Same as Mate/Align except the planes are not coplanar but parallel, with an offset distance between them



Assembly Constraints

Align Axis

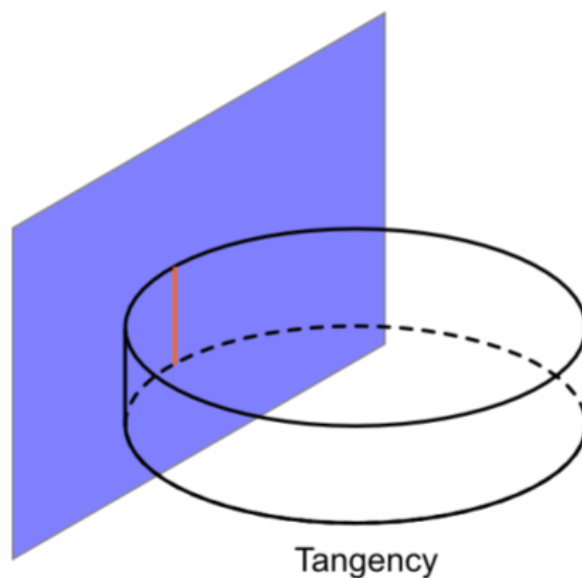
Axes of two parts are constrained to be colinear



Assembly Constraints

Tangency

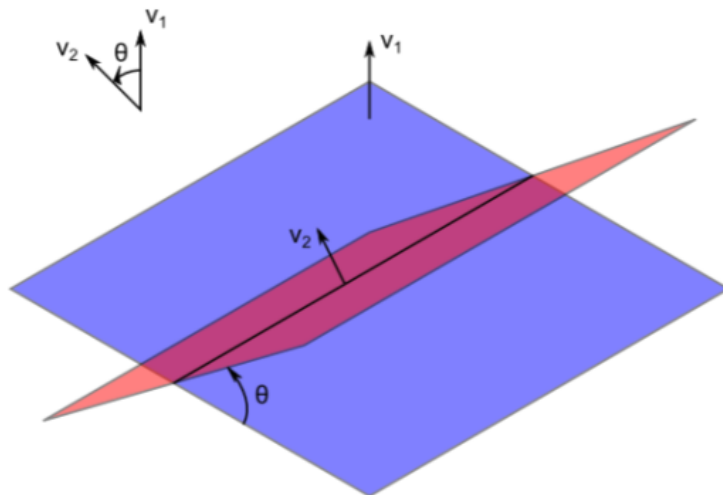
Two surfaces are constrained to be tangent to each other either at a single point or along a line.



Assembly Constraints

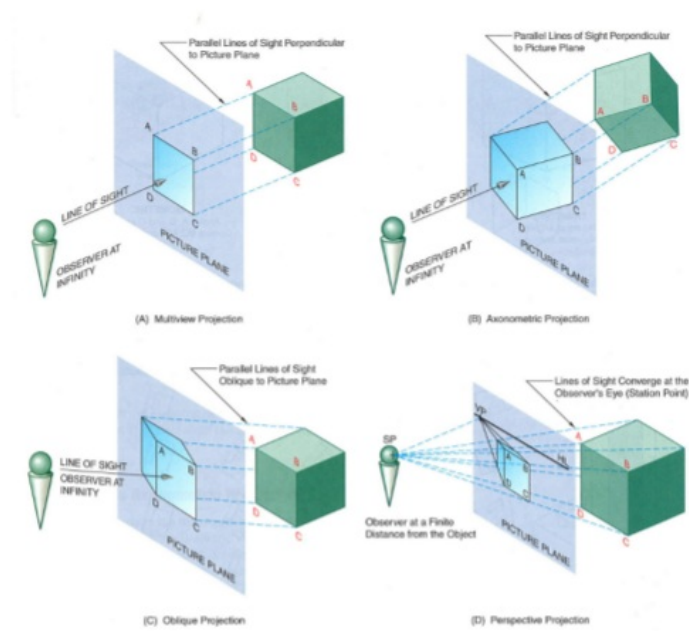
Angular

Two planes are angled relative to each other.

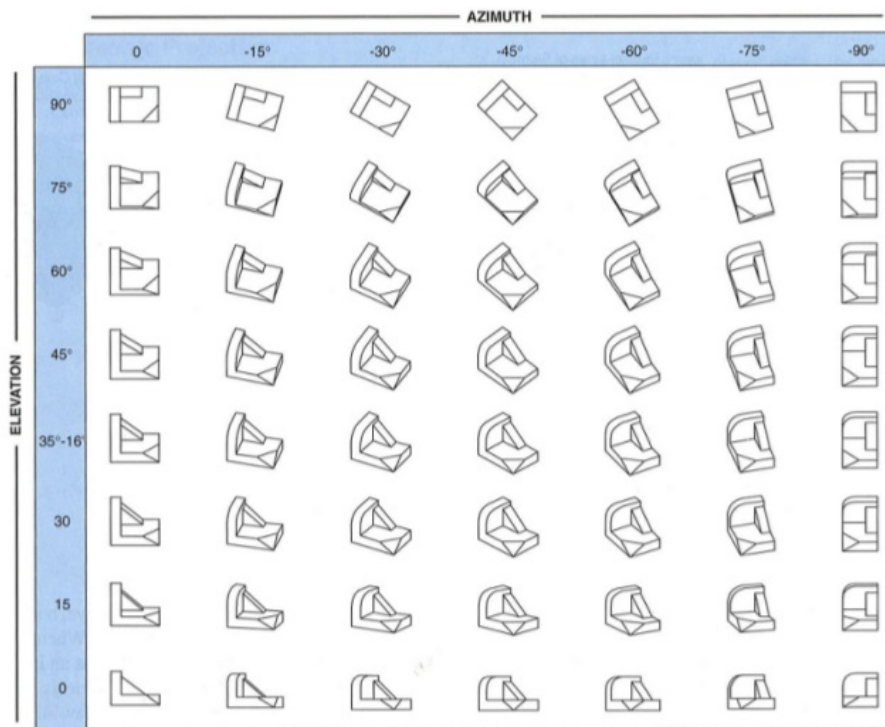


Projections

Rotated about one or two axes relative to the picture plane.



Axonometric



ISO Drawing Tips

Sections 7.2-7.8