

COURSE SYLLABUS

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Week	Topic	Lab	Required Reading from "Scientific Glassblowing"
January 18 (Week 1)	Syllabus / Course Overview.	Safety in working with glass. Glassblowing Equipment. Working with solid rod.	pages 10-48
January 25 (Week 2)	Properties of Borosilicate Glasses.	Cutting glass. Cutting TLC plates. Oxidation and reducing flames. Fire Polishing, Bending Glass	
January 31 (Week 3)	Physical Properties of Glass: Working, Strain and Annealing Point.	Side Seal, "Y" tubes, Hearts.	pages 52-75
February 7 (Week 4)	Properties of Soft Glass. Coefficient of Expansion of different glasses.	Identification of different glass with a compatibility test. Flares, funnels	TBA
February 14 (Week 5)	Properties of Fused Silica, Quartz. Vycor and Uranium Glasses.	Making a rotation tool. Points, Flat and Round Bottomed tubes, Beaded Edge.	
February 21 (Week 6)	"History of Scientific Glass Apparatus" Powerpoint presentation	Bulbs, Constrictions and Rings	pages 76-102
February 28 (Week 7)	Why glass breaks. Types of glass strain. Show "Mystery of Prince Rupert's Drop at 130,00fps"	Review of last week. Making a Prince Rupert Drop.	
March 1 (Week 8)	Midterm exam		
March 8 (Week 9)	Go over midterm exam. Methods of distillation		
March 22 (Week 10)	Methods of distillation.	How to fix star cracks. Ring seals, bubblers, condensers, cold traps.	pages 235-316
March 29 (Week11)	Ground Glass Joints how to measure and use them. How to choose which style is best for different experiments.	Holders for sealing on joints	
April 5	Stopcocks, how to measure and use them. How to choose which	Continue to work on condensers and sealing on components.	

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(Week12)	style is best for different experiments.		
April 12 (Week13)	Vacuum Technology. Glass to metal seals, graded seals and glass to ceramic seals.	Design and create a glass manifold	pages 157-189
April 19 (Week14)	Vacuum pumps, what can go wrong and what to do.	Finish glass manifold and start on trap.	
April 26 (Week15)	How to set up a glass manifold safely in the lab.	Vessels for evacuation. Dewar seals.	
April 3 (Week16)	How to use a tesla coil.	Evacuation of vessels and sealing of evacuated vessels	
Final	TBA		