Challenges
• Strict schedule to meet IPRO Day deadline
• Approval of equipment and supplies budget
• Ensuring safety in the lab
• Sanitation in brewing
• Teamwork across majors, years, distances, and subgroups

Objectives
• Learn about zymurgy
• Brew at least 10 gallons of beer during the semester
• Participate in Beer Competition
• Continuously refine process to meet consumer demand
• Investigate possibility of an on-campus brewery
• Attract sponsors to continue project in the future

Recommendations and Conclusions
In deciding which recipe of beer to brew, our group faced a major constraint: time. In order to create the best beer for a client, more extensive market research would need to be conducted and different recipes tested. The recipes can be modified according to the client’s gustatory delights and adventurous spirit. Furthermore, brewing multiple batches would not only lead to a more consistent product, but also provide insight for modifications to the recipe that improve the beer’s quality and refine the taste to fit the clients’ desires. Practice makes perfect!

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Blood, Sweat, and Beers thanks you for your time and hopes you enjoyed learning about zymurgy as much as we did! Cheers!
**Brewing Process**

**Developing the Wort**
- Add steeping grain to boiling water, steep for 20 minutes, remove
- Boil the wort for 2-3 minutes, remove from heat
- Add malt, reboil the mixture
- Add hops, leave in mixture until wort is completed and set to ferment
- Continue adding more rounds of hops to brewer’s taste
- Add additives, such as honey or orange peel, for desired flavor and boil
- Transfer wort to fermentation vessel and cool immediately

**Fermentation**
- “Pitch” the yeast and seal the vessel
- Allow Primary Fermentation to occur for two weeks
- Transfer to glass carboy and seal
- Allow Secondary Fermentation to occur for two more weeks to increase beer clarity and alcohol content

*Yeast* ([vitalityoflife.net](http://vitalityoflife.net))

*Grain* ([whiskywisetastings.nl](http://www.whiskywisetastings.nl))

*Malt* ([www.brews.com](http://www.brews.com))

*Hops* ([www.brewpno rke.com](http://www.brewpno rke.com))

*Organization*  
- Flexible sub-teams to address specific work towards project goals

The timeline was structured around specific IPRO office deadlines and several potentially time-limiting steps: purchasing of equipment, brewing of the beer, and fermentation of the beer.