

Chemistry 341: Global Challenges: A Chemical Perspective

Importance of chemistry in society. Detailed case studies drawn from modern chemistry: human health, energy, commodity chemicals, materials, green chemistry, agriculture.

- Course has undergone changes in recent years to include more in-class activities, group discussions, and a term-long research and communication poster project



CHEM 341 Poster Session, Winter 2014

- Required course for Combined Major in Science (CMS) students

- ~ 130 Students

Goals of the Project

- More consistent surveying to pinpoint problem areas, especially in regards to sections identified as having known student difficulty e.g. polymers
- Determine where additional resources may be effective?
- Assess demands of course on students
- Assess changes implemented to course (e.g. in-class activities)
- Student expectations and perceptions

Implementation

Students asked to volunteer in the formation of a "Course Committee". They would be given an opportunity to discuss their experiences and expectations with and provide feedback to improve the course

Three streams of feedback:

- Individual surveys filled out at the end of every class
- Individual pre- and post- midterm surveys
- Weekly group meetings

- 11 Students initially signed up, ~ 5 continued throughout term
- Weekly questionnaires were starting point for group discussion
- Informal, volunteer basis
- Start, Mid-, and End of term surveys distributed to all students in course

Class Surveys

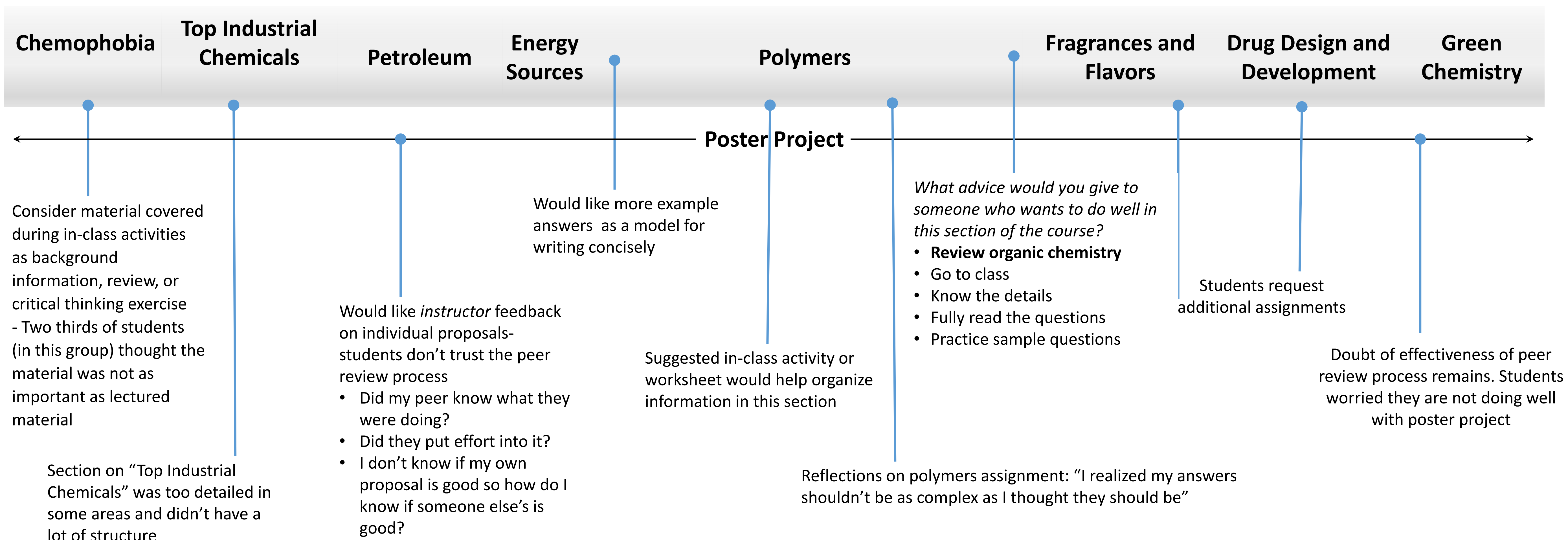
Feedback collected for 28 individual lectures

- Use of Connect site
- Time spent on course work and term project
- Views on course material
- Levels of confidence with material and knowing what they were going to be assessed on

	Top Industrial Chemicals	Petroleum	Energy Sources	Polymers	Fragrances and Flavors	Drug Design and Development	Green Chemistry																			
Did you find the material covered today...?	16-Jan	19-Jan	21-Jan	23-Jan	26-Jan	28-Jan	30-Jan	02-Feb	04-Feb	11-Feb	13-Feb	23-Feb	25-Feb	02-Mar	04-Mar	09-Mar	11-Mar	16-Mar	18-Mar	20-Mar	23-Mar	25-Mar	27-Mar	30-Mar	01-Apr	08-Apr
Good	5	2	3	3	3	4	3	4	1	2	3	1	1	1	0	2	0	0	2	0	3	3	3	1	0	1
Interesting	3	1	2	3	3	4	4	2	1	0	2	2	2	2	2	2	2	2	2	2	1	7	3	4	2	1
Relevant	4	3	2	4	4	2	3	4	1	1	4	1	3	2	1	1	0	1	1	1	5	2	3	1	0	1
Easy	1	1	0	0	1	1	1	2	0	1	1	1	2	1	1	2	0	0	0	0	1	1	1	0	0	1
Enjoyable	0	2	0	0	1	4	3	2	0	1	2	1	2	2	1	2	1	0	1	1	4	2	3	1	0	0
Eye-opening	0	1	2	0	0	1	4	0	0	0	1	1	1	1	0	1	0	0	0	1	1	4	1	3	0	0
Engaging	0	0	0	0	1	0	2	1	1	0	1	1	1	1	1	1	0	0	2	0	0	2	1	3	0	0
Challenging (I am learning new things)	0	2	2	1	3	1	1	1	0	1	0	2	1	0	1	1	0	1	1	0	1	0	3	0	1	2
Hard	0	0	0	0	1	0	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Boring	0	0	0	0	1	0	0	1	0	2	1	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1
Scary	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Uninteresting	0	1	0	0	0	0	0	1	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Stressful	0	0	0	0	1	0	1	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Overwhelming	0	0	1	1	0	0	0	0	1	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
Intimidating	0	0	0	2	0	1	0	1	0	1	0	1	1	0	0	0	1	0	0	0	1	1	0	0	0	0
Challenging (I don't have the background)	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Too slow	1	0	0	0	2	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Too fast	0	1	0	3	3	0	1	0	0	1	0	1	1	0	0	1	0	0	0	0	0	0	1	0	0	0
More explanation is needed	0	1	0	2	0	1	1	0	0	1	0	1	0	0	0	1	1	1	0	0	1	0	0	0	1	1
I'm unsure what to study	3	0	0	3	1	3	0	1	0	1	0	0	0	1	0	2	2	1	1	0	2	0	0	1	1	0
I know what is important	2	1	4	3	0	1	1	0	0	2	1	1	0	1	0	0	0	0	0	0	3	0	0	0	0	0

Group Discussions

Students provided feedback on all aspects of the course from delivery to content and resources, provided perspectives on in and out of class activities, and identified areas for review/adjustment.



Future Work

Feedback is still being collected as poster project and final group meeting are to come. Data is also being collected for Midterm III. The goal is to examine pre- and post- midterm surveys in regards to student expectation and confidence before and after each exam.

Identified Issues

- Concept map activity needs to be re-examined as it is not having the intended effect
- Plan to adjust the peer review aspects of the poster project as to increase the number of peer reviews each student performs.
- Addition of review activity focused on (pre-requisite) organic chemistry material may help students who traditionally struggle on midterm II