

CHEM-342 Introduction to Biochemistry

Spring 2006 Final Course Evaluation

Comment on the instructor. Narrative Responses

- A. Since this class was more about group work and PBL, the instructor didn't lecture to us. When he did talk about certain material, I felt that I got a better understanding. Dr. White is a very intellectual man and you could tell that he is very passionate about biochemistry. I thought he was also fair in grading and assignments.
- B. The professor was fine, I am not a fan of problem based learning however.
- C. Dr. White is a very knowledgeable and enthusiastic teacher who takes much care in his students. Unfortunately, he is very mistaken in the effectiveness of his teaching method.
- D. He knows his stuff and he is very helpful during class and in his office.
- E. Hal White knew his information and it was actually amazing the amount of material he could comment on. He could answer any question, and always wanted the student to come to the answer rather than having the answer presented outright.
- F. He is very intelligent and personable. He encourages being a well-rounded person on top of being a biochemist.
- G. Very enthusiastic professor, very helpful outside of class and wants to see everyone do well and try their best
- H. When he comes to sit down in groups with students he makes many people feel like they are very intelligent by constantly picking on people.
- I. I really liked Dr. White. I think he is very very nice and very approachable. Sometimes I wished that there was more interaction with him rather than just with the tutor.
- J. This was my first PBL course so I was kind of nervous going into it, but Dr. White did a great job teaching it. I really enjoyed the course.
- K. The instructor has a very good knowledge of the subject material. Encourages a lot of participation
- L. Very smart. PBL is tough the first time around
- M. Professor White is a really nice guy. He is very approachable and genuinely wants his students to do well.
- N. Dr. White was very interested in helping us understand learning issues; however, it felt that he was shocked that we didn't know things off hand.
- O. Dr. White is very knowledgeable on this subject and seems to care about us more than just students in this class, but about us individually as future biochemists and what he can do to help us along.
- P. He does not lecture enough. Although PBL is useful sometimes, often more background information would be really helpful. Also, sometimes he responds to the students in a condescending manner.
- Q. Very well versed in the material that he was teaching. Tried to get involved with all his students.
- R. I would have liked the instructor to devote 5-10 minutes to wrap up discussion as a class each period. This would help students to understand what should be emphasized for each article instead of leaving students' understanding of the topics up to the tutors.
- S. Prof. White is very interesting and knowledgeable. He has a unique style of teaching (PBL), and in theory, his way of teaching should be very successful. However, it didn't

work for me. It seemed to me that Prof. White didn't really teach much, and I understand that he meant to do it that way, but I do much better with lectures.

- T. Dr. White was very knowledgeable on the topics taught, so I wish he would have lectured and taught us more. I feel that I would have learned more hearing it come from his as opposed to attempting to figure things out on my own.
- U. The few times that Professor White has lectured, I have really enjoyed his lecture and retained most of what he lectured on. I wish he would have lectured more during the semester
- V. Very energetic

Identify or describe some thing(s) that Professor White does particularly well.

- A. He is good at getting students to go beyond understanding the content of the articles. This is done through his tests and also the mystery molecules. He also encourages us to look for information not just on the web, but through textbooks and scholarly articles.
- B. Encourage class discussion, even at 8 am.
- C. Demonstrations of abstract concepts, accessibility in and out of class, returning assignments promptly, care for students
- D. Dr. White is very good at explaining things. If you try to solve a learning issue, but are still having issues he will help. I like how he helps you to solve the problem instead of just telling you.
- E. Helps us understand themes of the articles through a series of questions that we can answer.
- F. Professor White shows students how to think by themselves which is very unique in the college setting because his class is very different than most college courses.
- G. He helps students learn for themselves rather than just giving them answers.
- H. He encourages thinking outside the box. He has a passion for PBL and shows that in class.
- I. Encourages participation and encourages researching of information to go beyond superficial understanding
- J. The jigsaw and hemoglobinopathy were very useful assignments.
- K. He is very effective in getting us to think in new and different ways. This is very helpful especially in a science atmosphere.
- L. I liked how Dr. White would make students struggle with a question for a while before helping out.
- M. Helps students use what they already know. Leads students to answers rather than just giving the answer.
- N. raises questions
- O. I like that he comes around to every group and sees how they are doing
- P. He tries to get the class to understand the principles behind each article and try to help the students to start thinking on their own.
- Q. Challenges Students to go beyond general knowledge and challenges students
- R. He is very helpful without just giving us answers. He knows what types of questions to ask to get us to think.

- S. He is very helpful if you go to his office hours. Also, he grades things quickly.
- T. Makes sure he finds time for every group. Forces individuals to learn by questioning what they don't know.
- U. The review sessions were helpful before exam.
- V. Prof. White is great at getting someone to answer a question. When he comes around to your group, he will bring up questions about a topic and you will have to figure out the answer. He is very patient and helpful in getting you to understand the answer that you finally do give, and I think that is very helpful in getting the students to really learn the material.
- W. Dr. White did help facilitate our understanding of the material by answering our questions with questions, but at times this was very frustrating. This was material we had never seen before, and sometimes our questions needed real answers from him.
- X. He helps students answer questions that they have without giving them the answers
- Y. When looking in on a group, he guided the group in a direction that was necessary to understanding the article.

Identify or describe some way(s) that Professor White could improve his teaching (and your learning).

- A. I think the only way Professor White could improve his teaching is by lecturing more or going over more of the learning issues as a class.
- B. I would say lecture more, but seeing that almost everyone who has filled these forms out in the past have also said that, so it would be redundant. I felt that PBL was very inefficient; I think much of the class could've learned a week's worth of material in a single lecture or less. The class needs more consistently good tutor-facilitators. Tutors shouldn't be switched in the middle of the semester; it messes with the camaraderie in the group.
- C. Dr. White could encourage students to come to his office more. I have found this very helpful as far as clearing up some learning issues I was stuck on. Maybe Dr. White could meet with student individually around mid semester to see how everyone is doing.
- D. More lecture
- E. I think possibly a little bit more lecture could be incorporated but it really isn't necessary for the class.
- F. More structured group work. Give certain topics to be covered during each class period to keep groups on task more.
- G. PBL does not work for everyone. Keeping the class more straightforward with a mix of PBL would be more appealing to the class in general.
- H. More optional help sessions would definitely help
- I. He often wastes a great deal of time in class talking about something that has no relevance to the subject matter
- J. He could improve a small amount in the way that he interacts with us. Sometimes I felt like he thought I was an idiot when I was trying to figure things involving class concepts out. I don't know if it was just me or if it was the way he asked questions. I know several people shared this opinion.

- K. I would like to see more whole class discussions so that each group can see what other groups came up with.
- L. Give just a little more help when students ask a question
- M. Rely less on the tutors. they really don't care that much
- N. He could probably be more clear about exactly what he wants on some of the assignments.
- O. I think that his tests do not cover what is discussed in some groups and would be nice to have an overview of what is needed to know for each article.
- P. Provide more guidance on what should be focused on in the articles
- Q. It would be helpful after finishing an article to summarize what each group learned as a whole class, not just answer unresolved learning issues. This way all groups can be sure they are on the same page and actually understood the articles.
- R. Possibly a little more lecturing... although this would not be necessary, I really enjoyed the group learning.
- S. He could provide a lot more background information and respond to students in a nicer manner.
- T. Provide more time for some of the more difficult articles or material.
- U. I would have liked the instructor to devote 5-10 minutes to wrap up discussion as a class each period. This would help students to understand what should be emphasized for each article instead of leaving students' understanding of the topics up to the tutors.
- V. I just really was not good at PBL. I had major troubles in reading an article and being able to make questions that I had about it, mostly because most of my questions were definitions or simple things like that. I think that it would be better if Prof. White gave the class a little overview of the material that they would encounter in the article before they read it. That way, less menial questions would come up.
- W. By being more willing to answer questions asked of him.
- X. Less group work, more lecturing. This seems somewhat trivial and dependent upon students learning styles. However, in groups, it's difficult to understand what is important to know. Ideally, we would walk away remembering everything we learned from every one of the articles read. Granted the lists of learning issues have been helpful in giving us the basic ideas of what Dr. White will expect on examinations, but more class standardization of important information would be useful. That said, I'm not sure how that could be done while retaining emphasis on group work

Detailed Responses for CHEM342010 for 06S - Instructor WHITE, HAROLD B

Detailed Results

3581 - Instead of group work, I think Dr. White should lecture more.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	7	5	9	7	28 of 29	3.57	1.14
Percent	0	25	17	32	25			

3425 - The instructor demonstrated thorough knowledge of the subject matter.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	0	1	6	21	28 of 29	4.71	.53
Percent	0	0	3	21	75			

3426 - The instructor presented the materials in an interesting way.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	2	4	14	8	28 of 29	4.00	.86
Percent	0	7	14	50	28			

3427 - The instructor encouraged class participation.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	0	2	6	19	27 of 29	4.63	.63
Percent	0	0	7	22	70			

4333 - The instructor was helpful if you sought help outside of class. (Don't respond if you didn't.)

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	1	1	6	7	15 of 29	4.27	.88
Percent	0	6	6	40	46			

4334 - Overall, the instructor was effective in facilitating your learning of the material in this course.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	1	1	3	17	6	28 of 29	3.93	.9
Percent	3	3	10	60	21			

3430 - I would recommend this instructor because of his/her teaching to others considering taking this course.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	3	3	16	6	28 of 29	3.89	.88
Percent	0	10	10	57	21			

Comment on the course.

- A. I still am not a big fan of PBL. I don't think I gained a complete understanding of the articles unless Dr. White went over different learning issues. Also, with PBL I think it is somewhat unfair because it is dependent on the tutor and the students in the group.
- B. The amount of understanding and skills I got out of this class in no way equaled the amount of work we had to put into it. Group quizzes were useful, but assignments like the concept map and writing a lab manual were a waste of time. Demonstrations were interesting, but group work was terribly inefficient and often frustrating. Reading scientific articles is fine, but perhaps instead of talking in groups about them the whole time, we could introduce the material in groups and then have lecture, so we can actually learn something about the articles in an effective way. Also, some more modern articles reflecting modern advances and technology in biochemistry would be for the benefit of the class, as opposed to attempting in vain to translate Stokes and Zinoffsky.
- C. I like how the course is set up to study the history of biochemistry. I learn better by using the PBL approach and I feel that this information will stick. Most of the information I learn somehow gets lost after I take the class, but with this method I actually understand the information.
- D. I liked the course. The problem based learning was very unusual but overall it was beneficial for this type of course. If this course had been a lecture course with the journals that were read I think there would have been less of an understanding of the material.
- E. I loved the class and I hated it. It was frustrating at times when we felt like we were going in circles trying to understand things. The group dynamic grew and we worked together within my group. When people did not do their full-share of work, the group suffered.
- F. Interesting material, interesting assignments. Introduces PPL to many, which I think is a good introduction to the real world
- G. The course material is extremely interesting and fun to learn about, but the way the material is presented in the PBL seemed to me to be very useless. I feel that if the course was taught normally the course material could have been learned in half a semester and much more clearly understood because it seems everything is left to the student to figure out and if the student cant do so then it is never truly clarified by the professor.
- H. I really liked this course because we learned so much about one interesting subject. It really opened my eyes to the fact that even a seemingly simple subject could have such depth and detail to know. I liked the format of the course but I feel that it will be more helpful if the course I just guided a little more by the professor especially because it is the first PBL class that many of the students in the major take. Also, I think that it would be very helpful if in the first week or two of class if there was time taken to teach how to use the library in an effectual way in relation to the class. When we had to look up information it was sometimes a daunting task because the internet is not very helpful and the library is very large and confusing. I think that it would be a good idea to teach students the most effective way to use the library so that the intimidation factor is lessened.
- I. The course was fun and helped me learn to be more of an independent thinker.
- J. The course was interesting in that it was the first time i took a course in this format. It is easier to understand and remember things when you learn them for yourself
- K. a necessary learning tool, but still difficult
- L. Personally I liked pbl. At first I thought it would be something I wouldn't agree with. But I turned out I got a great group and we work really well together. This was very beneficial for me, because after all 4 minds are better than one.

- M. I think this class needs more structure. This class cannot be tested unless there is an equal amount of knowledge between the groups.
- N. I feel the grades are not in the right ratios. Lots of time is spent on projects during the semester, yet they are worth much less than the midterm and final
- O. This course was amazing. I found the articles interesting and I feel as though I have really learned how to read scientific articles.
- P. There were so many assignments that I felt like I was getting nothing out of the course. I felt like as soon as I read one article, I had to read another article before I even understood the first one. Also, I understand that in PBL the student is supposed to figure out the answer for him or herself. However, doing this 100% of the time is impossible. While in "the real world" we may have to find most of the answers on our own, a) we are still in school and therefore while teachers shouldn't always just give us the answer, Dr. White shouldn't completely leave us on our own and b) I'm sure that in "the real world" other people are willing to help you out if they have the answer or at least talk to you if you are having problems.
- Q. Very helpful and learned a lot. Prepared me for the next biochemistry course.
- R. The course was interesting, and I had to think a lot for it. I actually liked the class in general. For me, up to now I have only taken introductory courses, so to take a course that is based solely on hemoglobin was cool, and I like the fact that I am so knowledgeable about a subject now.
- S. The course itself was different in that it was a PBL course, and I had never had one before. I enjoyed the class, but I felt that instead of teaching biochemistry, it taught us how to read chemistry documents and how to research and ask questions. I didn't feel that it had much correlation to the biochemistry classes we will be taking, other than the previous chemistry knowledge we had to have to understand the documents.
- T. I'm not particularly a fan of the PBL style, but it has forced me to experience a different kind of learning.

In an informative sentence or two, describe or characterize CHEM-342 to someone who might consider taking the course, e.g What is the essence of this course?

- A. CHEM-342 is an introductory course to biochemistry where students interact in groups of 5 or 6 to solve and understand the contents of several journal articles. These articles have to do with the evolution of hemoglobin, an important molecule in biochemistry.
- B. CHEM342 is a group-oriented class designed to help people learn who can't seem to do so in lecture situations. If you don't enjoy group work or do well in other courses, you will dislike this one.
- C. This course is all about learning how to learn and evaluate information.
- D. You work in groups which, by some luck, you will like the group members that are in it. If you don't like group work then don't take this course.
- E. This class is a problem-based learning course in which students work in groups to discuss, analyze, and research journals that teach students about the history of science centered around the topic of hemoglobin, while also teaching the basic fundamentals of biochemistry.
- F. You read scientific articles and discuss them with group members in order to increase your understanding of hemoglobin and protein synthesis. The class seems pointless in the beginning of the semester, but it teaches you to read difficult articles and work in groups. You also get to watch an awesome video on protein synthesis.

- G. The course is different from anything I've ever taken in that what and how you learn is up to you. The journal articles form a foundation for the broad base of knowledge you gain from the course.
- H. The class is an interesting worthwhile experience of a new kind where you mostly depend on your own
- I. CHEM 342 is a course about a very interesting subject that is a great introduction to biochem. However the course revolves entirely on articles which some were written about 150 years ago, and the objective of becoming a better learner is not at all achieved by this. So much more understanding and interest would come out of this course if it was not designed to make you better at learning but if was to make you understand the material.
- J. The essence of this course it to make connections between the basic principles of chemistry and biology that we have "learned" and the research that has gone on in the field. It really introduces biochemistry as a function of where it comes from.
- K. Though focusing on hemoglobin, this course is really about developing a thought process to help understand rather than memorize many scientific concepts.
- L. You learn a great deal about hemoglobin and how to find answers out for yourself. It is a little hard to get the hang of it at first, but quickly becomes easier.
- M. To understand the fundamentals of biochemistry from the smartest people who ever lived
- N. The essence of the course is teamwork and trying to look out side the box.
- O. CHEM-342 is class that helps you to realize that what is already known was the product of somebody else's work and to understand how they figured it out. This class allows you to realize that you will be doing when you are out in the field.
- P. The course is problem based learning class that is designed to introduce students to biochemistry by solving problems.
- Q. CHEM 342 stimulates individual learning and understanding. It allows students to acquire skills that will be useful in later classes. (However, PBL absolutely can be frustrating at times)
- R. This course helps you to understand the history of biochemistry and what it means to be a biochemist.
- S. The essence of the course is to read articles and discuss them in groups in order to obtain a general knowledge in biochemistry.
- T. The essence of this course is learning by using problem solving methods. This course will be very useful for future biochemistry courses and all other courses that require individual or group learning.
- U. This course is designed to help students learn the process of analyzing scientific journal articles.
- V. This course is meant to prepare you for your future biochemistry courses. It is an in-depth study of hemoglobin and Sickle Cell Anemia, and is in a format meant to provoke thought instead of memorizing facts. On successful completion of this course, one should be prepared to solve problems in all future courses
- W. This course focused mainly on how to read, analyze, and understand chemistry papers. It used information we had learned in previous chemistry classes to make connections to documents we were reading.
- X. CHEM342 is conducted primarily through group work. While the topics covered focus on hemoglobin, the purpose of the course is to expand learning methods, skills and opportunities.

- Y. You understand why biology courses can define some information on proteins.

Open Mic. Reflect on the course and identify those aspects that you like or think could be improved. Please suggest ways for improvement.

- A. This course was different for me, so I had a hard time adjusting. I think to improve this course, not only switching the tutors mid-semester, I think groups should be switched too. I also think Dr. White should lecture more. I did like the jigsaw groups. It involved creativity, it was fun, and I got to work with new people.
- B. I feel like the tutors were not always helpful in understanding the articles. It might have helped to have only the group discuss learning issues the first day of class without the tutors present so we can organize our thoughts and figure out what questions would be worthwhile to ask.
- C. Unlike most other classes, this one gives a more vivid picture of chemical topics through demonstration and hands-on activities. Important skills were learned in how to read scientific literature, and Dr. White should have a great interest in his students. Besides that, it's a waste. Too much busy work (concepts maps, "learning issues," internet searching for molecular structure or archaic nomenclature), and not enough reward. Suggestion: either eliminate a lot of the busy work or make the exams shorter (no group part) and worth less of the overall grade. Mostly review of past chemistry and biology topics (protein synthesis, amino acid structure, determination of composition, redox); any new factual knowledge was more trivia about hemoglobin than useful, applicable principles. Articles much more useless in second half of the semester than the first: written in modern scientific English and using more modern equipment. Group work was mostly those who didn't do work leeching off those who did. Group parts of exams should be eliminated. Not all tutors are created equal, and switching them at the middle of the semester only worsened group effectiveness. I would learn a lot more in a lecture-based course, and would not like to take another like this one.
- D. I really like the way the course is set up. I would suggest setting up groups a little different. Maybe try and get more diversity as far as strengths and weaknesses.
- E. Some groups may have internal conflicts, where someone might not speak as much but they do just as much work as others, but are unable to show it. These should be resolved somehow.
- F. I enjoyed the problem based learning because it gave me the ability to ask many of the questions that would go unasked in a lecture hall. I liked the small groups but I felt that we were always as productive as would have been liked. I felt like the group sometimes dragged because of absent members and better attendance would have helped a lot.
- G. I would be much more productive in this class if it was later than 8 AM. Some people have a lot of trouble waking up, functioning, and thinking clearly that early. If the class just involved taking notes it would not matter how awake students were, but the fact that discussion and higher level thinking are important makes this class very different. I think moving the class to 11 would help students to learn much more.
- H. Too many articles in a row without different assignments in between (i.e.- jigsaw group) made the class monotonous. Adding one or two more individual or group assignments would add more variety.
- I. I liked the PBL format, although I would not want to have all my courses taught in such a way. PBL is a good introduction to how the real world works, I believe. There are several factors, however, that are beyond the control of a student but can become potential grade changers, such as attitude of other group members and the tutor. Fortunate for some and unfortunate for others, a lot in this course depends on group members and the tutor. I

think it would be a good idea to change groups after the midterm, just like tutors. More optional review sessions, even when there is no exam, would be a good idea too.

- J. Overall I really liked this course. It forced me to take an active role in my education. It also improved my group work skills. I really think that the course can be improved by Dr. White guiding the class a little more in the beginning because it is very new for many of the students. Also I think very strongly that a group trip to the library to teach us how to most effectively use our resources would help students a lot. I found research very daunting and intimidating in this class and being taught where helpful tools in the library would have lessened this a great deal.
- K. I really enjoyed working in groups. Having a few extra brains helped me understand the material better. Though I originally was against switching peer tutors, after doing so I think that switching is a good idea. It enables you to experience two different methods of attacking the material.
- L. I liked finding out things on my own. One way to improve the course would be to have more in class demonstrations about the articles.
- M. Less articles. Some of them were not very informative. Stress the important ones.
- N. I'm not sure, I like how the course was organized
- O. I think that the tests should be based on a list of objectives that each group should have so that what is learned in each group is universal.
- P. Add in more Lectures Weight of grades should better reflect time spent working on assignment.
- Q. The experience with our peer tutor after spring break was very different than before spring break. I realize it is hard to regulate peer tutors but it seemed our tutor after spring break was not comfortable or as well informed about the articles and did not stimulate group discussion as well.
- R. I really enjoyed working in a group. The relaxed more personal atmosphere made it so much easier to ask questions than it would have been to ask them in front of the entire class. At first I wasn't thrilled with the idea of switching tutors... but it turned out fine.
- S. I thought that meeting with the lady at the library for the hemoglobinopathy was very helpful. I think that in general there should be more lecturing in the course.
- T. I liked working in a group because it could culminate each members own knowledge to give a greater understanding. I think that a better understanding of what is expected to be known on the test would be helpful in the future.
- U. I have mixed feelings of this course. On one hand I thought it was really interesting, and even though it was at 8am, I didn't mind coming to class. On the other hand, I feel like I did not learn everything I could have in this course because of the teaching style. I feel like I would have learned more about the topics if it had been taught as a lecture.
- V. This course was very different from any course I have ever taken before. I felt that the course focused more on teaching us skills such as researching, analyzing, and problem solving rather than concrete factual knowledge. I also felt that to focus the entire course on hemoglobin was a big strange as it is such a tiny part of biochemistry. I would have liked to learn more factual information as opposed to analyzing skills. With that being said, this course was important because it was so different from anything else. Although I was frustrated at times because my questions were never answered, it did teach me a great deal on how to work with my group members on problem solving.

Detailed Responses for CHEM342010 for 06S Detailed Results

248 - Overall, I learned a great deal in this course, including factual knowledge, principles of behavior, or skills.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	0	4	15	9	28 of 29	4.18	.67
Percent	0	0	14	53	32			

260 - On the average, the number of hours per week I spend working on this course outside of class is:

Scale text	1 - 0	3 - 2	5 - 4	7 - 6	8 or more	Total
Total	0	3	13	8	4	28 of 29
Percent	0	10	46	28	14	

3419 - The course emphasized understanding of the material rather than memorization.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	0	0	5	23	28 of 29	4.82	.39
Percent	0	0	0	17	82			

3420 - The course and its presentation were well organized.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	2	1	15	10	28 of 29	4.18	.82
Percent	0	7	3	53	35			

3577 - It would be a good idea to form new groups after midterm.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	9	8	1	6	4	28 of 29	2.57	1.5
Percent	32	28	3	21	14			

3578 - I found the demonstrations helped my understanding of the articles we read.

Scale text	Never	Rarely	Sometimes	Frequently	Always	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	1	5	10	12	28 of 29	4.18	.86
Percent	0	3	17	35	42			

3579 - Peer evaluation of student performance within groups was a worthwhile activity.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	2	5	5	12	4	28 of 29	3.39	1.17
Percent	7	17	17	42	14			

3580 - My group would have done fine without a tutor-facilitator.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	8	11	5	3	1	28 of 29	2.21	1.1
Percent	28	39	17	10	3			

3582 - I think examinations in CHEM-342 should focus more on factual information and less on problem solving.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	2	9	10	6	1	28 of 29	2.82	.98
Percent	7	32	35	21	3			

3583 - The assignments I turned in were graded and returned promptly.

Scale text	Never	Rarely	Sometimes	Frequently	Always	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	0	1	3	24	28 of 29	4.82	.48
Percent	0	0	3	10	85			

3584 - A considerable amount of the material in CHEM-342 reviewed material I had studied in other courses.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	1	6	3	14	4	28 of 29	3.5	1.11
Percent	3	21	10	50	14			

3585 - It was a bad idea to change tutor-facilitators after Spring Break.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	4	11	4	2	7	28 of 29	2.89	1.45
Percent	14	39	14	7	25			

3586 - My jigsaw group's concept map reflected mostly the efforts of one or two group members.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	5	10	4	6	3	28 of 29	2.71	1.3
Percent	17	35	14	21	10			

3587 - I think grades in CHEM-342 should be based solely on individual performance.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	2	12	10	2	2	28 of 29	2.64	.99
Percent	7	42	35	7	7			

3588 - I talked about subjects and issues arising in this course with people not enrolled in the course.

Scale text	Never	Rarely	Sometimes	Frequently	Always	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	2	5	10	8	3	28 of 29	3.18	1.09
Percent	7	17	35	28	10			

3589 - I feel that I can apply the general principles I learned in CHEM-342 to problems in other courses.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	0	1	21	6	28 of 29	4.18	.48
Percent	0	0	3	75	21			

3590 - I found the hemoglobinopathy assignment worthwhile.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	1	2	4	14	7	28 of 29	3.86	1.01
Percent	3	7	14	50	25			

3591 - As a result of this class my ability to find, read, and analyze information has improved.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	0	4	16	8	28 of 29	4.14	.65
Percent	0	0	14	57	28			

3592 - I feel confident that I can read and understand research articles.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	1	4	12	11	28 of 29	4.18	.82
Percent	0	3	14	42	39			

3593 - I am comfortable working in groups.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	1	3	18	6	28 of 29	4.04	.69
Percent	0	3	10	64	21			

3594 - I feel comfortable sharing information.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	0	3	18	7	28 of 29	4.14	.59
Percent	0	0	10	64	25			

3595 - I feel comfortable asking help from others.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	2	1	20	5	28 of 29	4.00	.72
Percent	0	7	3	71	17			

3596 - I feel comfortable in relying on information obtained from others.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	3	5	19	1	28 of 29	3.64	.73
Percent	0	10	17	67	3			

3597 - Given the opportunity, I would like to take another class designed like this one.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	5	6	4	9	4	28 of 29	3.04	1.37
Percent	17	21	14	32	14			

3598 - Discussion of the mystery molecules helped me make connections to things I had learned in other chemistry courses.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	3	2	19	4	28 of 29	3.86	.8
Percent	0	10	7	67	14			

3599 - I found the course web-site to be a useful resource.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	0	2	12	14	28 of 29	4.43	.63
Percent	0	0	7	42	50			

3600 - I found the quotations on the board thought provoking.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	2	9	11	6	28 of 29	3.75	.89
Percent	0	7	32	39	21			

3601 - I enjoyed working in the jigsaw group for one week.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	3	3	16	6	28 of 29	3.89	.88
Percent	0	10	10	57	21			

3602 - Wireless laptop computers are of little use in this course.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	9	15	3	1	0	28 of 29	1.86	.76
Percent	32	53	10	3	0			

3603 - My group made use of the classroom library.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	1	1	3	22	1	28 of 29	3.75	.75
Percent	3	3	10	78	3			

3612 - I found the scratch-off group-quiz format a useful learning activity.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	1	2	4	9	12	28 of 29	4.04	1.1
Percent	3	7	14	32	42			

3613 - Having a group outing at the beginning of the course helped my group to work well together.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	2	6	7	11	2	28 of 29	3.18	1.09
Percent	7	21	25	39	7			

3604 - Overall, I would rate this class:

Scale text	Unsatisfactory	Satisfactory	Good	Very Good	Excellent	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	1	3	7	12	5	28 of 29	3.61	1.03
Percent	3	10	25	42	17			

5172 - Having Dr. Howard Dintzis visit the class was worthwhile.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	0	2	8	17	27 of 29	4.56	.64
Percent	0	0	7	29	62			

4331 - The course examinations emphasized understanding of the material.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	2	1	12	13	28 of 29	4.29	.85
Percent	0	7	3	42	46			

4329 - The course was well organized.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	0	3	12	13	28 of 29	4.36	.68
Percent	0	0	10	42	46			