Final Course Evaluations for CHEM-342, *Introduction to Biochemistry*, Spring 2005
Essay Responses for Instructor: WHITE, HAROLD B.
Question: Comment on the instructor.

A. Dr. White has a very innovative way of teaching. It promotes creativity which is greatly appreciated as a rarity in the sciences.

B. Dr. White is a great teacher. He is helpful in office hours and is really interested in making you learn.

C. Dr. White doesn't really do much instructing in Chem 342, most of the learning is left up to the individuals in each group, however this is the method of teaching he is trying to employ.

D. Dr. White is extremely helpful outside and inside of class. He is a great teacher.

E. Dr. White is a phenomenal professor. I thoroughly enjoyed this class and the way that it was taught.

F. Dr. White was very helpful in both explaining important concepts, as well as leading us to find answers for ourselves.

G. He seemed like he was very knowledgeable in the subject matter, but it was frustrating that he made us work more in groups instead of actually teaching.

H. Dr. White makes learning very fun. I always enjoyed talking to him about anything. He is a great professor!!!!

I. Prof. White possesses a wealth of knowledge and the understanding of how to apply that knowledge. I feel that the opportunity to assimilate and apply information is the greatest benefit that CHEM342 allows for.

J. Prof. White is a very knowledgeable person especially in science. He tries to make you understand the subject matter but it is not always conveyed. I think a little more direction from him would help the learning and understanding better.

K. I like the way PBL works. I feel as though I learn more than a regular lecture class. Dr. White tried to bring in as many visual things as possible. That was something I liked since I'm a visual person.

L. He made the class interesting, however i do not like PBL, so i wouldnt recommend taking the course--Prof. White is a very good professor though.

M. Dr. White does a great job.

N. Dr. White facilitated learning by making his students formulate good questions, or "learning issues" about the articles we've read. This taught us how to identify our own problems, or things we didn't know. This also pointed us in the right direction to find the answers to our questions, so that we taught ourselves, or were taught by peers.

O. He has a very wide span of knowledge and approaches the material in an interesting way.

P. Horribly misguided in his approach of teaching.

Q. Dr. White's ideal about PBL is unique in facilitating learning. However, I feel there is progress to be made by standing on the shoulders of those who made these discoveries. Instead, it seems we start from scratch from 1864. I feel in a unique way, but the course was lacking more substance. For instance, the way I learned was mind expanding to a degree. However, I am motivated enough to learn this material anyway it was taught. I would have gained more from the course had there been more lecturing in addition to group work.

R. Dr. White demonstrates thorough knowledge not only in biochemistry, but also in how to spark his students' interests, thoughts, and curiosity.

S. He strongly encourages everyone to generate questions about the topics and look up and learn everything you can.

T. Dr. White is an interesting professor who goes out of his way to be creative.

U. I had a very good lesson on Biochem this semester

V. This course demonstrated a different style of teaching, one that involved much class participation and group work. Students were forced to learn the articles as a result. I feel that this method of teaching is very effective in not only teaching the material, but also introducing a new way to approach various problems.

W. Dr. White was a good instructor. He was always ready to help us if we had questions about a topic. Sometimes though, his questions were so roundabout that I wasn't sure what he was asking and whether I was answering the right thing or inferring the right idea.

X. Dr. White knew a lot about the course information, but I do not feel like I learned a lot because of the setup of the class. I think I would have learned more if it was a straight lecture instead of problem based.

Y. Although I feel that I've learned a lot about problem based learning and how to succeed in Prof. White's class, I don't feel like I have a firm grasp on the topics we covered because there was not enough structure.

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

A. He is very helpful although he rarely "gives out" answers. PBL is the most effective way of learning material, rather than memorizing it.

B. Describing the processes of how things work or answering some of the questions we still have about the current article.

C. His goal is to make you an independent thinker and to this end, he is quite successful.

D. He is very good at forcing students to look for the answers from a source other than himself. He knows how to make students learn several new ideas from a single journal article.

E. I like the way class is run. I think students will participate more when they are in small groups. His idea of problem based learning helped me gain a better understanding of the material.

F. He is so helpful with any question one may ask and instead of just giving you the answer he helps you to figure it out on your own. It's so much easier to remember the concept this way.

G. Dr. White is good at identifying particularly difficult learning issues and then going over them in class.

H. He helped to wrap up each article nicely and explained things that we were unable to figure out on our own. He was also good about coming around to each group and guide us in the right direction if we were struggling with something.

I. I like how he makes you solve the problem yourself. In the end you learn more. Also the way the class is, helps you realize that you know more than you think.

   - allowing for and encouraging self discovery of knowledge and education.
   - when he does present information, Prof. White does so in an effective and easy-to-follow way.

J. He lets us come to our own conclusions about things, while trying to steer us in the right direction. He also tries to make everyone's ideas seem plausible or if they are way off, he doesn't belittle you.

K. When we have a question he would ask us a question back to try to answer the original question we had. The way he would reword his question would point us in the direction to the answer. I liked it because it made us answer our own questions instead of having Dr. White just answering for us.

L. He presented the material in interesting ways

M. He encourages class participation and individual/group thinking.

N. Dr. White asks pointed questions, causing students to learn the detailed function or purpose of a chemical or method. He also generates critical thinking questions that make students apply concepts they learned outside the context in which they've learned them.

O. Makes sure to cover material in great depth so it is well understood.

P. Leads you to teach yourself and use group learning to learn.

Q. He does a very good job of asking questions that encourage thinking. He generally asks a question that you know the answer, but you just have to recall the information in a way you haven't thought about the material before.

R. Professor White is very good at connecting far off topics in a productive an interesting way. He can also lead people not to an answer, but rather to an understanding of that answer.

S. Professor White has a way of answering your questions with another question which leads you to find the answer to your question on your own.

T. Provides us with extra questions for the articles, ones that we may not have thought of.

U. Getting people to ask learning questions. Being helpful. Actually having and following a scheduled syllabus.

V. Generating interesting questions.

W. He makes you think about problems constructively, instead of just regurgitating facts. He also tries to convey the principle wherein students should want to learn, to solve problems, and not just be trying to get through the class.

X. He is very good at presenting the material in a very interesting way. He makes it very relevant and the way that he asked us to figure out the problems made me want to find out the answer.

Y. When he comes into out group during discussions, his input is always good and informative

Z. He allows us to explore learning on a group basis which I found to be more effective than most of my regular lecture classes, giving you time to ask questions and then research things you did not understand. He was always present in class if you had any questions and to assist you in anyway. We had a few projects which were effective in applying the knowledge we were acquiring throughout the semester and were a variety of projects so that we weren't doing the same project every time.

AA. He is good at making topics interesting and encouraging class participation

BB. Asking questions, making you think about related topics.

CC. Explains knowledge that students cannot understand after they have had significant time to learn it for themselves. Knows very well when to help the students along aside from letting them learn on their own.

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

A. Some of the tutors were less than helpful.

B. Perhaps split the class 50% PBL and 50% lecture. This way, we learn more information and also how to solve questions independently.

C. Lecture - not just answer people's learning issues, but actually give a lecture on the topic. Also, a lot of the techniques used in biochem we learned about were from the 1800s. It would've been more meaningful to learn how things are done in the modern day. Also, the whole class was about hemoglobin. Certainly there's much more to biochem than hemoglobin and Dr. White could've tried to incorporate other aspects of biochemistry in this course.

D. I think it would be very helpful it there was more lecture, or if the tutors had a lecture outline for them to help lead group instruction. Its very hard to know what

learning issues are important and require the most attention and work. Without direct lecturing from Dr. White I feel as if the only time I know for sure if the answers to the learning issues we've been discussing are correct, is when we are quizzed on the material.

E. I think Dr. White could spend more time to lecture the class as a whole.

F. I can not think of anything that Dr. White could improve upon. I thought the class was well organized. Dr. White often came around to our individual groups to check up on us and answer any questions. He cleared up any issues with a lecture on the last day of the article and showed experiments to help us visualize the concept. Thanks Dr. White!

G. I would enjoy more demonstrations. I also really liked it when the student who had malaria came to class to answer questions. I enjoyed being able to ask her direct questions on her own experience and getting immediate feedback.

H. I think I would have learned a little bit more if he had devoted even 10 - 20 minutes to teaching and giving us a little bit of background information for each article.

I. I think more guests in the class would help. I would have loved to have met one the people who wrote the articles. From this better understanding of the articles would be achieved.

J. I think that a little more direction or detailed clarification would be helpful. As a result of the nature of the course's format, I think that some student's probably walk away form the course with an incomplete or slightly inaccurate interpretation of the material. While I believe that the educational liberty that Prof. White allows for is extremely beneficial, I think that intermittent instructional sessions, may best serve to

K. If he just talked a little more about each subject after we have had a chance to learn it on our own, that would help a lot. Sometimes, one day to wrap up leaves me more confused and I am left with more questions than when i started. Also, because this is all group work, some times things you thought were correct turn out to be wrong.

L. I would have liked Dr. White to have a brief lecture at the end of each article we read just to make sure we covered everything we needed to and to reiterate the material so I would remember it.

M. Lecture more, make the class NOT at 8am.

N. I think that tutors should be more helpful in identifying learning issues.

O. He should review important concepts that the students are expected to learn from each article after the time allotted to learn these concepts elapses. This way he can really tell if the students understand the readings.

P. Lecture and help the class on hard to find topics a little more.

Q. Teaching is good, just need a little more of it than the group work

R. It would be much better if he actually taught. I haven't learned anything about biochemistry in this course. Instead, I have learned how to put up with group work.

S. A structured lecture in addition to group work would be effective in this class.

T. He could possibly show some connection between some of the learning material. Sometimes it was hard to see, "why it is important".

U. Throwing in more information in pre-article lectures on the basics that helped facilitate the asking of questions would be helpful. A lot of definition/arcane language questions could be gotten out of the way quickly so more time could be spent investigating the bigger issues.

V. The tutors are a very important part of the class, and monitoring their skills and techniques a little more effectively would be better.

W. This class was a new experience for me, and I believe I tried to approach it in a way that I could get the most out of it. My only complaint is that sometimes, more often than not, I didn't know whether what I was inferring was correct or not because we didn't always have a class discussion about the major points/concepts about the articles we were working on. I did think that the way we were expected to figure out the concepts on our own was a great experience. However, I think that I would have gotten even more out of the class if one of the days was devoted to solely going over the concepts of the article instead of doing "learning issues".

X. I think having a whole class wrap-up after each article is very helpful rather than just after a few of the articles discussed in class. Also, I think that changing the groups midway through the semester would be useful.

Y. Help out more by lecturing on the complicated issues that we may not understand

Z. More lecture. If part of every class was lecture I feel that it would have more structure. Also, for the hemoglobinopathy, I was really distressed when he said that he wasn't expecting us to have all five sources be about our variant. I thought we should have most, if not all, our sources be about our variant, and I don't think that expectation was at all clear before the assignment was due.

Question: Comment on the course.

A. This has been my favorite course in my entire academic career.

B. This is a good class for the average student - its a nice introduction to PBL teaching method, though compared to other chemistry classes, I did not learn as much in this class.

C. The courses forces students to learn how to gather information from outside professor's lectures and it gave me a better way to read and understand journal articles.

D. This is a difficult course and the grading is tough. However, I have learned and retained more in this class than I have in any other courses.

E. I thought that the course interesting and very informative. I never knew so much about hemoglobin. I think that it prepared me well for 641 next year because I have been introduced to amino acids and the way proteins are formed.

F. I thought the course did a good job of addressing other chemistry problems and question that did not necessarily relate to hemoglobin.

G. There was no memorization. The entire class helpful in knowing about chemistry techniques that would help us in the future.

H. Overall, excellent.

I. This course is very hard and I actually think it would be easier if taught in a lecture style with a discussion section for group work. I really have more learning issues b/c of my group members and their egos than in a normal class.

J. The course was different than my other courses because it was a PBL. I liked that we were able to work with others to find solutions. Having a tutor rather than a professor to guide you along was a lot easier and more comfortable.

K. I don't like PBL at all. It was discouraging when I constantly got B^+s on the learning issues that were valid learning issues for me. I don't recommend this course if you don't like group work.

L. PBL is interesting, but it can be utilized to its fullest extent if everyone shows up and is awake. For a course like this, an 8 am time makes absolutely no sense.

M. The course focuses on independent learning. The professor and peer tutors, who took the class last year, play the role of stimulating interest and inquiry. Learning, however, is based on the amount of effort the student uses to formulate relevant questions and find the answers to those questions.

N. It is an interesting course because it is different from any other course I have ever taken before.

O. I believe this course should be taken before advancing to 641. Even though I did fine without taking the courses in the usual order, this class would have been very beneficial in 642.

P. I have no idea how the course is being graded. The organization is poor...students rarely know exactly what is expected of them.

Q. I don't feel I got as much from the course than if it involved more of a structured lecture. The things I learned seemed to have loose connections. A solid lecture to tie things together, and provide knowledge to students about what they are learning would be extremely useful. Also, I was very motivated to learn biochem in this way. My group, however, was not. When we did the jigsaw groups I gave a lot of info and supported much of what I said. My group mates couldn't even explain questions I had. This really hurt me for the midterm.

R. This course is what reassured me that biochemistry is the right major for me. The course material is interesting, and a great introduction to the major.

S. I liked the PBL learning style.

T. PBL was novel and exciting at first. Then it kind of got old. I don't know what to suggest to fix that. It was a different experience, and I have learned a lot, I am just hoping I will retain the knowledge that was learned with the PBL format. I really liked the problem solving aspects of the midterm.

U. The first month was hard to follow since it was a new type of setting and a new subject for me. But once I got used to it, I loved it. Thanks.

V. The course was designed to instill a new method of thinking as well as a few new concepts, rather than straight memorization.

W. I think this class is very important for science majors because no class has ever been devoted to actually reading science journals, a skill very important for biochemists/chemists and other scientists. I think the class is a great idea and a very good experience for biochemistry majors.

X. Overall, a great course. I felt a learned a lot, without reading a textbook and memorizing like many courses.

Y. I really enjoyed the class. I was skeptical at first of the problem based learning basis for the class as I had not previously had a class of this nature. However, after having the class I found the teaching method extremely effective and couldn't imagine learning the material in any other way. It was very useful in applying knowledge not just of the diseases or mutations we discussed but also general knowledge from many other classes previously taken.

Z. It has helped me to develop strategies for problem solving

Question: 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. The essence of the course is generally about biochemistry, but much will be learned that will help in every aspect of life, including: challenging information presented, problem solving, comfort around peers, etc. I enjoyed this class, despite my concerns at the beginning about how early it was offered.

B. CHEM342 is all about you and your study habits. It forces you to tackle your questions head on without the teacher telling you what the answer is. There is no lecture to this class, just problem based learning. If this is your cup of tea, drink it, and drink it fast because it gets cold very quickly.

C. The essence of this course is group learning and independent thinking.

D. This course focuses on using your resources outside of class to learn new material so that you can share your new knowledge in a group setting. Once all the basic knowledge ahs been shared problem solving techniques are necessary to further understand the topics in question.

E. Students learn the material on their own and in groups. The professor does little teaching, and the tutors provide the most help in better understanding the material.

F. This course presents general principles associated with biochemistry in the context of the discovery and developments surrounding hemoglobin. The class is taught in a problem based learning format to facilitate better understanding of the material.

G. It's a class that gets you to start thinking through problems yourself, rather than simply memorizing and regurgitating what the professor tells you.

H. I feel like I learned a little bit about different biochemical processes and amino acids, but if I don't hear another thing about hemoglobin the rest of my life, I won't be disappointed. I do however, feel prepared to move on to CHEM641

I. Chem342 is a course where you are challenged to learn biochemistry techniques, and other useful biochem facts in a group of peers. Through questions and answers you will figure out what was really done in different Biochem articles.

J. CHEM342 utilizes the subject of blood chemistry, and specifically sickle cell anemia, as a setting to teach important including critical and independent thinking and information analysis.

K. It is a really difficult course in which you work in groups, depend on others knowledge while learning skills that are useful for most subjects.

L. CHEM-342 is a problem based learning course that allows a student to work in groups to solve problems. Students will learn about hemoglobin and sickle cell anemia in the articles that are read in the course.

M. This course is designed to allow students to obtain knowledge, individually and with a group, through reading scientific articles and solving learning issues.

N. A course which teaches people how to work in groups and understand research by forcing them to work with a fellow undergraduate as a tutor with little instructor help.

O. You will apply concepts of chemistry, biology, genetics, and molecular biology to understand the function, purpose, and relevance of research projects. You will learn how to find the important concepts of a research publication, such as the purpose of experimental methods employed by researchers and how these methods contribute to testing the hypothesis of their research projects.

P. I recommend it highly as a course for those willing to expand their academic horizons.

Q. The course involves reading chemical articles and addressing questions you have about the article. Then in a small group of fellow students the questions are answered.

R. Chem342 prepares students for higher-level thinking that is required in the graduate level courses (641, 642, etc.) It gives a very good introduction and brief overview of the detailed subjects in the courses that follow.

S. The course is a waste of time. The amount of Biochemistry you learn in this course over the semester could easily be learned in a few weeks of a lecture

course. I'm not bitter about the class... I am doing quite well. I just think it is not useful.

T. The course is based on an ideal, which in theory works wonderfully. However, in practice the kinks need to be worked out.

U. This course will not only teach you useful information about biochemistry, but also how to dig deeper and ask questions in order to get the full understanding of something, whether it is biochemistry related or not.

V. CHEM 342 is a problem based learning course that encourages you to research topics including the two studied most common, sickle cell anemia and hemoglobin. Through this course you learn to read, write, and analyze scientific journal articles, and draw your own conclusions about the topic you research.

W. The essence of the course is in asking questions and trying to figure them out. That can be difficult and lead you astray - but the payoff often makes it worthwhile, most of the time.

X. To read the articles and enjoy it.

Y. This class is designed around the premise of problem-based learning, wherein groups are required to analyze different problems through the means of scientific articles.

Z. This class focuses on working with the people in your group to figure out the concepts and main ideas of landmark articles in science. Instead of being told what is going on, you are expected to figure it out on your own. Sometimes this can be really hard if you aren't familiar at all with a topic being discussed. All science majors (biochem/chem/biology) can benefit from this class because even if the material is sometimes confusing or repetitive, you get really good at reading and deciphering the terminology and writing techniques of science journals.

AA. Putting your knowledge from past courses together with the minds of your other groups members and apply it to concepts of biochemistry that you will learn reading informative articles.

BB. The basis of this class is problem solving in a group atmosphere in which you read scientific articles and interpret their meaning allowing for your discovery of new issues in the process.

CC. The course will be a good background for courses you will need in the future, and you learn more then you realize

DD. The class uses problem based learning and group discussions to explore research articles and topics concerning hemoglobin and sickle cell anemia.

EE. It teaches you to teach yourself science through viewing primary source articles and identifying those issues of the article which you don’t understand. You then look those issues up from other sources of information and are able to better understand the material

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

A. I think that changing the tutors was unfavorable because by the middle of the semester, our group had become comfortable together and had bonded. Also, for the remainder of the semester we still felt like our original tutor was our "real" tutor, and never really adopted our tutor as part of our group. The jigsaw groups also had a similar effect. It was difficult to work under such time restraints with people that I didn't know very well. I believe that group presentations would probably be a more effective way of presenting the material to everyone, or maybe doing the different articles in our own groups then doing a presentation then jigsawing for a day or two to share and explain articles to other groups.

B. 50% lecture, 50% PBL. If the course was set up this way, I think that the students would learn more factual information and also learn how to solve and understand scientific problems and articles more easily.

C. See above - under what could the instructor do better.

D. I felt as if on ALL assignments I never really knew what you wanted. The directions for the hemoglobinopathy were very vague. While groups we were all never really sure if what we were discussing would be what you consider to be most important until we see your learning issues. Additional professor lecture would be helpful to ensure that every group has learned the most important things to be learned and they have learned them correctly.

E. I liked working in small groups because it gave more opportunity to ask questions and understand answers. However, I think more time when the professor is teaching, would be helpful.

F. This was my first PBL course that did not include a lecture each day and I truly enjoyed it. It was a good experience to work with group members in solving problems regarding the article read. I learned a great deal in this class including how to 'be curious' again. I think one area that the course could be improved is in the Jigsaw groups...our group felt very rushed on the concept map and because of this it ended up being myself and one other person who completed the project. It was quite a stress on the two of us trying to do the work of four people.

G. I am not sure if changing the groups over mid term would have been a good idea or not since we didn't do it. Sometimes I feel that a new group would be helpful, while other times the group I was in functioned very well. Over all I started off hating the class. I didn't feel comfortable trusting what other people "thought" the articles meant. After a few articles I started loving the class and I became anxious to figure out the articles with my fellow group members. Overall the class was very different from normal ones. It was a nice break from the usual lectures. I feel that I did learn a lot from the course and I would love to take another PBL course in the future. Thanks for the great semester Dr. White. Also, the old movie with all of the hippies was great. I think every college student should watch it.

H. I think that this is a great course. As mentioned previously, I feel that the there could be minor improvements and adjustments regarding.

I. Groups are difficult b/c we all come from different backgrounds and learn differently. Some people are very arrogant and feel that they know everything, which is not helpful in this setting. I really hated depending on what other people claimed they knew and it turned out to be wrong. I know that was the point of the course but my grade won't tell that, it only shows a letter. I feel I did a lot of work for this class, I tried my hardest and I still will not have a grade that reflects that work.

J. I like the style of the class because it was different than the normal lectures. I would have liked a brief lecture at the end of each article just to make sure my group went over everything that we should have. 8 am class I feel is too early for me. Sometimes I just couldn't focus. I didn't like that we changed tutors after spring break because I was just getting used to my old tutor and then we get a new one. I was comfortable in asking questions and letting everyone know I didn't understand something but then we changed tutors and I didn't feel as comfortable. This class required a lot more time and work than I had expected but it allowed me to learn more since I had to find the answers myself rather than having someone give me the answers.

K. It was interesting, however the 8am aspect really damaged my enthusiasm for it. Also group work is one of my least favorite things so I didn’t like the PBL format. One way to improve the class would be to after the article is finished being discussed, lecture on the important concepts that should have been covered.

L. I think that groups are penalized unfairly by members who make no effort to learn or contribute. Certain people rarely speak during class except to ask for explanations to things explained 15 min before. This holds the group back.

M. I liked the ability to work with groups, because when I had difficulty understanding a concept or was confused, it was easier to learn from my group member who read the same article and was told the same information from the tutor, yet understood the material. An improvement I suggest is to make the jigsaw group members or tutor evaluate the other members because some students may leave all the work on one or two people during that short week period. They may think that because it is only week, that they can slack off and the group won't complain since its the first and only often they've made.

N. I enjoyed working in the groups. A little more guidance could have been given on how to write learning issues.

O. the suggestion is a little more explanations at the end of the articles about facts discussed in the article

P. The computers in the classroom would be more worthwhile if they had a longer battery time. I know batteries are costly, but I feel I would have used the internet more often if the computer started up faster and lasted the whole class period. I appreciated the library of Chemistry and Biochemistry textbooks available for class time and for borrowing.

Q. Again, the amount of information learned could be increased drastically if this were a lecture course. I understand the need to learn on ones own, but many people (myself included) do that already through synthesis and analysis of ideas presented in a lecture. We don't need a course to teach us how to think like chemists.

R. A mix of structured lecture, and group work would be optimal for learning. However, that only works if your group is motivated. I felt I was only one of two people motivated to do work and learn the material. As we would split up learning issues, half the group said they couldn't find anything or gave false info. This hurt me during the midterm.

S. I think the idea of the jigsaw groups is a good way to switch things up, but I think if my original group had done the same assignment, we would have created a better flow chart. it took some time to get comfortable with the new group, and the new tutor. Maybe the jigsaw groups can be done in the opposite way, and do the assignment with your original group, and then switch groups to explain it to other people.

T. see previous answers

U. I think the first month was very hard to adjust. Especially it was really hard for me. So I think maybe the first month they should have more interesting stuff compared to more reactions.

V. I really enjoyed this class. My only suggestion would be to make sure that the groups focus on the important learning issues for each article, so that they aren't bogged down by specifics.

W. If we spent one day that was traditional lecture type, I think a lot of the confusion of the course would be cleared up. It is really hard when there are different tutor's with different abilities and groups with different strengths and weaknesses to give everyone and equal chance at succeeding in this class. I sometimes felt like my group was getting gypped because we had one less group member and only two of the members actually contributed.

X. As previously stated I think that whole class wrap-ups with Dr. White would be useful to have after discussion of each article. Also, I think that switching group members mid-way through the semester would also be another way to facilitate learning. I enjoyed switching members for the jigsaw and had wished to stay in the jigsaw group. I didn't have any problems within my own group other than that they did not all follow through with the group rules. I don't know that the group 'outing' in the beginning is really necessary because it didn't really accomplish anything other than making ground rules which could be accomplished in class.

Y. I think there should be one lecture a week where the professor goes over the learning issues to help clarify things for the students

Z. I thought the quizzes covered really obscure material that was not always relevant to what my group focused on. Its really hard to create a quiz that every group has an equal shot at when the groups are not in synch with each other about which learning issues they focused their time on.

Detailed Responses for CHEM342010 for 05S - 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	4	5	4	9	9	31/31	3.45	1.41
Percent	12	16	12	29	29			

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	0	2	29	31/31	4.94	.25
Percent	0	0	0	6	93			

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	1	2	15	13	31/31	4.29	.74
Percent	0	3	6	48	41			

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	0	2	29	31 of 31	4.94	.25
Percent	0	0	0	6	93			

3428 - The instructor was helpful if I 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	0	0	10	14	24/31	4.58	.5
Percent	0	0	0	41	58			

3429 - Overall, the instructor was effective in facilitating my learning of the materials in this course.

Scale	1	2	3	4	5			
Total	0	2	3	13	13	31/ 31	4.19	.87
Percent	0	6	9	41	41			

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	1	1	5	7	17	31/ 31	4.23	1.06
Percent	3	3						

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	1	4	12	14	31/31	4.26	.82
Percent	0	3	12	38	45			

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	6	9	11	5	31/ 31	
Percent	0	19	29	35	16		

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	6	10	3	10	2	31/31	2.74	1.29
Percent	19	32	9	32	6			

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	12	9	9	31/ 31	3.84	.9
Percent	0	3	38	29	29			

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	4	4	7	11	5	31/31	3.29	1.27
Percent	12	12	22	35	16			

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**			
Percent	41	38	6	9	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	5	12	9	5	0	31/31	2.45	.96
Percent	16	38	29	16	0			

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	0	1	30	31/ 31	4.97	.18
Percent	0	0	0	3	96			

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	4	10	3	9	5	31/31	3.03	1.35
Percent	12	32	9	29	16			

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	6	10	6	5	4	31/31	2.71	1.32
Percent	19	32	19	16	12			

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	3	10	3	6	8	30/31	3.2	1.42
Percent	10	33	10	20	26			

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	16	5	6	2	31/31	2.68	1.08
Percent	6	51	16	19	6			

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	1	3	16	10	1	31/ 31	3.23	.8
Percent	3	9	51	32	3			

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	1	0	1	18	11	31/31	4.23	.8
Percent	3	0	3	58	35			

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	2	2	8	12	7	31/31	3.65	1.11
Percent	6	6	25	38	22			

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	2	2	12	15	31/31	4.29	.86
Percent	0	6	6	38	48			

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	0	1	18	12	31/ 31	4.35	.55
Percent	0	0	3	58	38			

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	3	1	17	10	31/31	4.1	.87
Percent	0	9	3	54	32			

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	1	1	15	14	31/ 31	4.35	.71
Percent	0	3	3	48	45			

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	1	4	16	10	31/31	4.13	.76
Percent	0	3	12	51	32			

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	2	6	8	14	1	31/31	3.19	1.01
Percent	6	19	25	45	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	4	5	6	7	9	31/31	3.39	1.41
Percent	12	16	19	22	29			

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	4	8	15	3	30/31	3.57	.86
Percent	0	13	26	50	10			

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	1	2	14	14	31/31	4.32	.75
Percent	0	3	6	45	45			

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	3	9	14	4	30/31	3.63	.85
Percent	0	10	30	46	13			

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	2	6	5	10	8	31/31	3.52	1.26
Percent	6	19	16	32	25			

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	6	11	7	6	1	31/31	2.52	1.12
Percent	19	35	22	19	3			

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	0	1	2	19	9	31/31	4.16	.69
Percent	0	3	6	61	29			

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	1	15	12	31/ 31	4.13	.99
Percent	3	6	3	48	38			

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	1	4	9	14	3	31/ 31	3.45	.96
Percent	3	12	29	45	9			

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	4	5	9	12	31/31	3.87	1.18
Percent	3	12	16	29	38			

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	1	0	5	25	31/31	4.74	.63
Percent	0	3	0	16	80			

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	1	0	3	11	16	31/ 31	4.32	.91
Percent	3	0	9	35	51			