

**CHEM-342 Introduction to Biochemistry - Spring 2007**  
**Final Course Evaluation - Narrative Comments**

**Essay Responses for Question ID 3436**  
**Comment on the course**

- A. Very different approach to learning, but was beneficial.
- B. The course promoted a higher level of thinking
- C. I loved this course!
- D. It was a very interesting course. It challenged me in new ways to go further beyond my current level of understanding. I think that students would be more alert and receptive to the class if it were held later in the day, especially since many biochemistry majors don't have a choice about night labs and are up late.
- E. This course was very different than any other course that I have taken. It was a positive experience for me because I am an inquisitive student and was motivated to seek answers to my learning issues. I believe that having taken this course will help me in the future in many ways beyond just the knowledge of the biochemical material. I have learned a lot in this course!
- F. Very good course, taught me how to think outside the box, and do alot of research outside of class
- G. This course required understanding the concept well. It was a lot of commitment in class and out of class as well. Before coming to class, preparation on each article was almost required.
- H. One of my favorite courses to date.
- I. This was an excellent introduction to Biochemistry. I have learned that this is definitely the right major for me. Every day I was excited to be in class and to talk about biochemical concepts.
- J. The course was different from anything I have ever experienced, but I think I have gain a firm understanding of the concepts discussed.
- K. Good course
- L. Really great course. I learned a lot and also realized that I knew a lot more than I thought.
- M. The MOST DIFFICULT course I have taken at UD. However it was not in vain. It didn't seem like I was learning with out a purpose. I may not do as well as I want to but i have learned more than any other science class.
- N. The structure was different than most other classes I have taken. I definitely learned a lot with the group discussion, but would like to see a few more lectures.
- O. I really enjoyed the class even though it was a challenge.
- P. Problem based learning method is very helpful.

- Q. I like the way the course is set up. It forces students to find a new way of learning and looking for information. It helps to build confidence in one's own ability and gives a great method for reading old or confusing science articles. The PBL helped us get to know each other, improve on group working skills, and learn to rely on one another for information. It made learning go faster.
- R. See final comment.
- S. I'm not sure if it should be required. I would never have taken it on my own accord. though it does prove useful, I don't think anyone should be forced into it. centered around hemoglobin in particular. It will be interesting to see how the knowledge acquired this semester will carry over (in general) to different areas of biochemistry.
- T. Overall it was enjoyable
- U. I enjoyed working in groups, but if students are not prepared then it will hurt the group. I had some trouble like this in my group and when it came time for the test their was some information we did not cover.
- V. The course was good, I found the material to be very interesting. I liked how I could see how all the topics fit together.
- W. The course was very informative and learning was fun!
- X. Great course. Most work I've ever done for any course, but that is very dependent on the individual and how much they choose to put in. The more you put in, the more you get out of it which is how i think classes should be.
- Y. Very interesting, exams at times are difficult, but as long as the concepts are understood the tests are a breeze
- Z. Much learning was required outside of class and this is complicated for people who already have a busy schedule outside of class. I don't feel I was pre-warned well enough to understand what I was getting into, therefore my schedule was very hectic and learning very inefficient.
- AA. I enjoyed taking this course, and the unique way it was taught enabled me to understand the material better.
- BB. The course was a good learning experience. It gave students the confidence to read scientific articles and be able to understand them, even if some background research is needed. It also covered key material on the key subject of hemoglobin, while also incorporating other subjects and topics. It was a very interesting course.
- CC.** The course took 90% of my weekly efforts and it was hit or miss. Nonetheless, when reading scientific articles, the notion of making good learning issues and questioning why researchers do things has really helped me.
- DD. It definitely taught me a lot about biochemistry in general. I liked how it all

### Essay responses to Question ID 3607

**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. It is a great educative course if you don't mind working hard for it. at the end it was worth it.
- B. This course is not only a science course, but it is in many ways a history course as well. The specifics you learn about hemoglobin are in many ways a vehicle for learning about biochemistry and science in general.
- C. The course is based on how much you research, and how committed your group members are to actually learning the material. Also, with out a good jigsaw leader, this class can be very challenging because Prof. White does not mediate class activity very actively.
- D. The course is a PBL course that provokes thought and creates connections between science courses once thought to be unrelated.
- E. CHEM-342 is a PBL course designed to review and introduce new biochemical concepts by analyzing primary articles about human hemoglobin and sickle-cell anemia.
- F. This is a very thought provoking course that will challenge you in new ways about the science knowledge you already have. How well you do in this course is directly dependent on the amount of effort you put in.
- G. The purpose of CHEM342 is to develop scientific article reading analysis skills and to get students to identify things that they don't know so that they can go and find the answers to understand the articles. Hemoglobin and sickle cell anemia served as sample subjects for which these skills could be developed .
- H. In CHEM 342, students will learn how to study independently and at the same time how to cooperate with other people. This class provided a lot of opportunity to work with professional journals.
- I. This is course is basically a self-guided introduction of the basic principles of biochemistry through the study of hemoglobin.
- J. The essence of this course is to learn major concepts in biochemistry through group work and also through searching for sources in the library. This course requires attention every day of the semester.
- K. This course is different from any other course you have had at UD to this point. This course is really based on working in groups, and working together with your group to develop a greater understanding of a concept as opposed to memorizing fact.
- L. The essence of the course is to evolve the way in which you learn material, any material. It teaches you how to ask the right questions, and how to research those questions.

- M. It is a unique course that uses previous knowledge, use of articles, and group work to learn new concepts. It is definitely not your typical college lecture, but if you give it a little time you will learn more than you did in any other class!
- N. This course is very thought provoking however, do not take this course unless you are ready to sacrifice a lot of free time to learn. It makes you step outside of your comfort zone.
- O. This course introduces the basic concepts of biochemistry, improves research skills, and improves one's ability to read and understand scientific research articles.
- P. Very well organized. Mostly about the different aspects of hemoglobin
- Q. CHEM-342 is a class designed to help students find better ways of learning and understanding material, become better group workers, have more confidence in their own knowledge, and help reduce the apprehensiveness that comes with asking questions. By reading a series of prominent scientific articles, students not only have the opportunity to better their ability at reading science journals, but to understand how science in general progresses over time.
- R. This course teaches you to read and interpret a scientific journal by reading a series of articles and understanding each of them through work in a group.
- S. This course teaches you how to go about learning biochemistry. it helps you understand and start to brainstorm on how biochemical problems are solved.
- T. You will learn to work with others and become an independent researching student. And you will become a hemoglobin expert.
- U. It is a course designed to incorporate chemistry and biology in a way that information in both areas substantially supports one another backed by lots of outside research.
- V. It is a class that focuses on group and individual work and looking up information to solve issues in research articles.
- W. The course was very informative regarding hemoglobin and sickle cell anemia. The format is tough to get used to at first, but it is helpful in working in groups, doing research, and reading science papers.
- X. This course is a group discussion course which allows on to develop skills that I have never worked with before. These skills being the fact that I infer things from facts in the articles to understand why certain things were done.
- Y. I believe that a mixture of chemistry and biology are a huge part of this course. Everything I learned related to both subjects in some way.
- Z. Identifying anything you don't know and then taking the initiative to find out the answer (which oftentimes leads to even more questions).

- AA. The analysis of scientific articles
- BB. It is a course full of a lot of information that you will be required to learn outside of class, because there isn't much lecture to learn from. So make sure you have plenty of time to devote to the course, more than others.
- CC. This course will allow you to evaluate and understand how to read scientific articles.
- DD. Discovery of biochemical problems through the reading of scientific articles
- EE. Chem342 is a learning experience that teaches you how to read and, more importantly, understand scientific articles in a group work format. It may be frustrating at times, but you learn a lot of useful information, especially on the topic of hemoglobin.
- FF. Hemoglobin.. through time, then and now..
- GG. The essence of the course is to evaluate the historically and conceptually analyze what we know of hemoglobin.

### **Essay responses to Question ID 3611**

**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 overall the class was great however certain learning issues always are left unanswered due to lack of time. may be a little more time devotion per article.
- B. I enjoyed the group format, but I also got the impression that I lucked out and was placed in one of the better, more motivated groups. Due to how the course is set up, I do feel there is a bit of a "chance" factor to things. This became apparent to me when we were put into the jigsaw groups, and our tutor was clearly an outstanding student. He was so good and knowledgeable that he definitely overstepped his role as a tutor, taking on more of a teacher/lecturer role, which was nice for us because we had to do much less work and research, but it definitely was not in the spirit of PBL. After the midterm, our new group tutor was definitely the weakest of the three tutors I had during the semester. He/she admitted that he/she was generally a B-/C+/C student in his/her chemistry courses. One suggestion I might have is that it might be a good idea that there be a GPA or grade requirement to become a tutor for the class (i.e., you must have received at least a B in C-342.) I think this would make things overall more fair to the students taking the class.
- C. This course could be improved if more answers were given to the tougher concepts discussed in the articles, instead on relying on the research done by you and your group members, e.g. answers to some of the learning issues given at the end of each article. A study guide for the exams would be helpful as well.

- D. I think that the jigsaw groups should have peer evaluations since not everyone does an equal amount of work.
- E. I really like this course. I think to improve there should be a full class discussion at the end of each article to clarify information/share information with the rest of the class.
- F. The course was a big time commitment because countless hours were spent trying to resolve learning issues. I spent many nights struggling with articles and sometimes there were unsuccessful efforts in trying to find the answer. At times it seemed that my efforts were futile but in the end I learned more than I realized. I like the group idea. I was fortunate enough to be a part of a group in which I got along with all members. I believe the group quizzes were fun though stressful experiences. Improvements: The group tutors should rotate from group to group every class period. The midterm and final examinations should not be so heavily weighted.
- G. I think the groups could be better divided. I see that some groups were much better than other groups, and contained members that all put in time outside of class. I liked this class because the material was very interesting, but I didn't like this class because part of the grade was based on group work, and my group did not put in the same amount of effort that I did.
- H. As it was mentioned earlier, I think Dr. White should lecture more on the details of the biochemistry concept. I feel like I learned a lot about hemoglobin and sickle cell, however, whenever I encounter other subjects in biochemistry, I tend to get lost.
- I. Overall the course was very good. However, I feel it would be more fun and interesting if every article we changed groups and tutors that way we 1) got to meet more people within our major and 2) were exposed to different the different teaching styles of the tutors.
- J. I think the course is structured fine. I feel as if sometimes, there could be a little more direction by the tutors. The course is unlike anything I have ever taken before, but it is structured so well, that many of my potential complaints have dissipated.
- K. I liked group discussions; however, I would have liked it if all of my group had contributed equally to the discussions. Harsher penalties for missing classes and not doing the work might help this problem. Overall, if you have a determined, willing to learn group, the course will be enjoyable for you.
- L. The biggest problem is incompetent group tutors. If the tutor is really bad it can cause a lot of problems.
- M. I think I have pretty much covered everything in my previous comments. I liked that it was a PBL learning class. More quizzes would help. Sometimes I wish that we would go over material as a class.

- N. Having a couple more lectures could have helped. I liked how the exams were conceptual and not straight memorization, although they were more difficult.
- O. Its a good course, perhaps it would be better to switch groups after midterm.
- P. The Peer Facilitators were extremely helpful and friendly. I enjoyed getting up every morning and coming to class because I knew I would be able to discuss issues and ideas in a subject I'm interested in. My group worked really well together and we always managed to get through most of the learning issues. I liked the structure of the course and felt that it gave me the tools I need to read science journals, work in a group, and become a better problem solver. It was a really great class.
- Q. I think the grading system should be a little more clear. though I have a general idea of my grade, I don't know what it is for sure, which is important to me.
- R. I was glad to have taken this course this semester because I feel it prepared me well for researching articles for the research I will be doing this summer. I would have loved to keep my original tutor for the entire semester. Jigsaw groups were bearable but it was awkward trying to get to know new faces in only a week.
- S. I think that writing learning issues for each article was important. I think that changing the groups after the midterm might be a good idea, because try to impress people that they do not know early on and this can be done by spending more time with CHEM 342.
- T. The course was good and I learned a lot by reading and discussing the articles. As far as suggestions for the course possibly more lecturing would be helpful to make sure each student covered/learned the same material and something was not skipped over by the tutor. The professor was horrible I suppose for improvement he could try to allow everyone a fair opportunity in achieving an A.
- U. I don't know what Mic Reflect is.
- V. I think that Dr. White decided on whether or not a student would be an "A" student or a "B" student etc. I felt some benefited from this and that others were not given a chance to improve once their first grade was recorded. I also feel that his "analness" about being on time to class is a bit harsh. I understand that this is his time to announce things and to discuss anything but sometimes things happen that should be excusable. I feel that he holds lateness or absence against one too much.
- W. More emphasize on what is important of each article or concepts that are needed to be focused on
- X. I like the working in groups. I disliked having to learn everything outside of class, because my work schedule would not allow it.

- Y. I did not like switching tutors after spring break because I felt that my first tutor understood the material better and was able to lead more towards a better understanding of the articles.
- Z. More involvement by Dr. White through lecturing to the class. Work within groups was very helpful but there were sometimes issues within the article that required a lot of outside knowledge.
- AA. The course was enjoyable and will benefit me in the future. It taught me researching skills and techniques to problem solving. The group work is sometimes frustrating because you always have those that work harder than others however, this is balanced out by the group evaluations, which should be highly thought about.
- BB. I honestly believe that the lack of interaction with the professor let me down. Dr. White is a very respected mind in the field of biochemistry and I had hoped to learn from him as opposed to relying on peers, some of which did not even bother to take the course seriously.

**Question ID 3435**

**Comment on the instructor (Harold B. White).**

- A. Dr. White's class is inherently different than any other class because it utilizes Problem Based Learning. Because of this, there is minimal lecturing on the part of the professor, but nonetheless it is apparent that Dr. White is extremely knowledgeable of the material, and he was able to answer any question that arose in class very clearly. At the end of the semester I felt that he instilled in all the students an overall appreciation of the history of biochemistry as well as the overall nature of the scientific process, and of course, he gave us a thorough knowledge of the functions and properties of hemoglobin. To be able to do all this with minimal lecturing is certainly out of the ordinary and definitely commendable.
- B. Raised important issues when addressing class, but if done while mediating groups, would have had more of an impact on the learning of all the groups.
- C. Dr. White obviously cares very much about student learning. He is extremely knowledgeable and is very good at sharing his knowledge with others.
- D. Dr. White is a kind, approachable individual. He is never intimidating to approach and is always more than willing to answer any unresolved learning issues in class and out of class. He feels passionately about his PBL teaching method and encourages a self-instilled desire to learn beyond the classroom purposes.
- E. I think Prof. White, did a great job and is a very good professor. He made class very interesting, and helped us learn a great deal throughout this semester.

- F. The class was in PBL format. Students interacted more with the group tutors than the professor sometimes. However, when we asked Dr. White questions, he was very helpful answering our questions. He also provided time for us to think about the problems first before giving the answers right away. Also if we had questions in the subject area, he was really helpful during the office hours.
- G. Dr. White is really cool to talk to outside of class.
- H. I think that Dr. White is an outstanding professor. He encourages students to first think on their own to see if they can answer their own questions, but he also facilitates by asking general questions when a student is stumped. Dr. White was also helpful outside of class during his office hours.
- I. In a PBL course, often it is difficult to comment on the instructor. When sought out, Dr. White was very helpful.
- J. Great instructor, really wants to students to learn and grow academically.
- K. He is amazing. The class is definitely unorthodox, but I learned a lot and Dr. White really taught me a lot about biochemistry and life!
- L. The instructor was very helpful outside of class. In class he was somewhat helpful but because the structure of the class he was limited in the way he could be extremely helpful. He did however stimulate much interest and thought on topics in question. Someone's level of interest in this class or instructor should be based on how much they are willing to work.
- M. Knew the subject matter well.
- N. Did not teach.
- O. Dr. White was very knowledgeable of the subject, very interesting to listen to, had good quotes to inspire every day.
- P. Dr. White really knows the material. He is always friendly and willing to help students. He encourages each student to go above and beyond and to learn as much as possible.
- Q. See [my] next comment.
- R. Very nice and PBL was actually enjoyable
- S. Dr. White did an excellent job challenging students to find out answers by themselves. I liked the fact that after each article that was read that he asked students if they had any questions on the article. I also like how he supplied his own learning issues for the class.
- T. I did not like the professor very much. First, I felt that he put way too much emphasis on being on time I agree punctuality is important, but sometimes things just happen. Also I feel like he had too much power over grading I feel like if you were on the professor's good side you did good, but other wise you didn't. It was like he decided in the beginning of the semester what kind of student you were and gave you that grade no matter how hard you

tried. Also I feel like the professor based grades on just if the student was smart in general, that if the student was smart they did good. Isn't the point of a course to learn the material, and a test is just to evaluate how well the student learns the material covered. I strongly dislike Professor White I think he is the worst professor I have had at the University so far.

- U. The instructor didn't talk in class very much but this was due to the fact that it was a student discussion class and it required us to figure out learning issues that we came up with about each article given to us.
- V. You can tell that he is genuinely interested in the well-being of his students. Expects a lot, but in a good way because it drives you to go beyond what you may normally be satisfied with.
- W. He was very helpful and kind
- X. Very knowledgeable on the information of the course.
- Y. Professor White was extremely knowledgeable and good at explaining the concepts when that time came. Majority of the learning came from your own explanation; however, Professor White was exceptional at explaining the main concepts or answering any questions that one may have had at the end of each article.
- Z. I liked problem based learning. I learned more than I have ever learned before. Typically I tend to just memorize information, but I think I will remember the material from this class better because I learned it.
- AA. The lack of interaction with the professor wasn't appreciated. Considering the professor is a world renown figure in the subject, I feel as if I did not get as much out of him as I could.

**Question ID 3608**

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

- A. Dr. White organizes his class extremely well. The order in which we read the articles was clearly intended so that each article built upon what was learned in a previous article. Although he lectured infrequently, when he did it always really helped clarify the fundamental concepts of each article.
- B. Is able to tie all the relevant material together at the end of each article.
- C. He is very prompt with returning graded material and he is very good at leading students to the answer, rather than outright telling them. This encourages problem-solving and practice with this will definitely help me in the future.
- D. I like that Dr. White may me think about science in a new way. This is the first time when I felt I actually got to apply what I learned in my other

- courses. I thought it was good that Dr. White put the pressure on us as students to decide how much we wanted to get out of this course
- E. Professor White is always open to criticism and feedback on what works and does not work. He provides the students with the opportunity to assess themselves in the learning groups so that changes can be made to enhance learning environment the next half of the semester and for the next year's students. He listens to the student suggestions and takes action.
  - F. He is very good at answering your question. He makes you think outside of the box, and helps you learn a lot in this way. He is also very helpful, if you go to him with an individual question. He is very knowledgeable on the material that he teaches.
  - G. He provided questions where we can go more in depth in that one particular subject. Whenever we turned in our assignments, he would grade it the next class meeting with detailed comments where we can make the improvements, etc. The comments he made was really helpful and encouraged me to work hard. He provided the opportunity to work independently outside of the class and with other people as well.
  - H. Break material down to its core.
  - I. Dr. White organized the course material very effectively. The articles that we read over the course of the semester clearly showed the progression of knowledge of hemoglobin and sickle cell anemia through a 100-year time span. The articles also incorporated major biochemistry concepts that are not only relevant to hemoglobin, but to all proteins. Dr. White is always prepared and in the classroom well before the class starts, and he's always there to ask questions. He also explains concepts to the class by drawing diagrams, so that the student can visually see what is occurring at the molecular or experimental level.
  - J. Encouraging personal understanding and comprehension as opposed to memorization of the facts.
  - K. Ask interesting questions that make you think beyond the subject matter
  - L. Encourages students to learn things on their own. Encourages students to make use of things we already know. He sets us up for a strong knowledge base for more upper-level classes.
  - M. Many people don't like this but I LOVED the fact that when people ask questions he doesn't answer them directly and gets to the bottom of the learning issue. He asks you questions so that you think more about what you are asking and get to the specifics. For example, if you ask why they use a certain chemical to maintain the pH levels. He will ask what is pH. What is the optimal pH of the chemical used? What is the pH of the substance being contaminated with the chemical? So you understand everything that is going on with the experiment.
  - N. Challenges students to answer their own questions.

- O. He knows material, and makes you think about the topic at hand.
- P. The problem based learning approach is very good for learning. He is able to offer help without giving the answer straight away.
- Q. Dr. White always gives an interesting quotation and a good introduction to class at 8 am every morning. He understands students and knows when and when not to assign work outside of class (during the weeks leading up to a project deadline, for example). He explains confusing material and is always willing to answer questions.
- R. Dr. White is very knowledgeable in the areas covered within the confines of this course. Any question that arose was able to be answered thoroughly and in a way that made sense in the context of the course.
- S. He is very approachable, which is a unique quality to have in the chemistry department. He is also very good at encouraging students to inquire and think for themselves instead of listing facts and expecting them to be absorbed and understood.
- T. Poses outside learning as a must, which helps to cement learning of the material
- U. Motivates students to find answers for themselves. Is very organized and is open to questions.
- V. He is very knowledgeable about the subject covered. I like how professor white has the tutors there to help with learning, my tutors were both fantastic.
- W. Professor White does a good job at getting us engaged in the group. Everyone must understand the articles, and it helps to talk about it with the group. He also asks questions that get you thinking the right way about how to go about discovering new ways of looking at things.
- X. He really encourages people to do a lot of outside work. He is really nice to talk to after class and really appreciates each student.
- Y. Very good at encouraging students and pushing them to dig deep and understand the concepts. Looks fairly at the how much effort and work you put into the class, and not solely on how intelligent a person may be.
- Z. He emphasized group learning and how to work with our groups
- AA. Has an very good knowledge of the material. Explains things thoroughly and well.
- BB. He does a good job pushing the class investigate learning issues on their own.
- CC. Presents outside information for the work that had connected things learned in class with real life situations.
- DD. Lecturing!

**Question ID 3609**

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

- A. I sometimes felt that learning issues pertaining to the specifics of experimental procedures are things that cannot be looked up on the internet or in a textbook, and while I know the purpose of PBL is to avoid lectures, it would have been nice if at times Dr. White had shed some light on why some experimental procedures were the way they were (i.e., why certain reagents were used over others, why the type of buffer matters, etc.)
- B. Come to class with prepared questions to ask each group based on issues that are pertinent to topics placed on exams. Give us more of an idea what to expect.
- C. I think there should be one class period at the end of each journal article devoted to Dr. White answering questions about the article/talking about the key points.
- D. I would like to read articles that are slightly more recent, to get an idea on where research on hemoglobin is heading in the future, and to just gain experience with the current writing style of the modern scientific community. I think Dr. White should require students to at least hand in learning issues before each article, even if they already received a top grade.
- E. Professor White could provide the students with main objectives for each article. In addition to distributing learning issues after exposure to the articles, a list of objectives handed out before the article is read could guide the students in a direction when actually reading the article.
- F. Professor White could teach more often, instead of just doing group work.
- G. It would have been nice if I had some more basic background in Biochemistry. I think if Dr. White lectured before every article on the main points, it would have been easier to understand some of the concept we went over this year. I wish he came to my group more often to discuss/engage in the article. I think we could have learned more information in depth.
- H. In addition to giving learning issues at the end of each article, give a sheet with a short abstract of the article that way we can more easily understand the key points of the article.
- I. I think that it would be a great idea to incorporate a lab portion to this class. It would be helpful to recreate some experiments and to also see the apparatuses that these scientists used. It would be neat to see a Tiselius electrophoresis apparatus or a TriCarb scintillation counter. We could also do some tryptic digestions.

- J. Perhaps have more review sessions periodically, maybe outside of class, to discuss any unresolved questions. Often, the wrap-up time in class is not sufficient.
- K. More thorough wrap-ups on articles
- L. Dr. White could do a little more wrap up between articles. He could make sure all the tutors are competent (some definitely were not!).
- M. Well, although he has the right to have high expectations he has to understand that every one in the class is not equally prepared for the class. Being prepared to break down topics to levels that he not touched on in very long time would help. But I feel that although he did go a satisfactory job he could improve this.
- N. Just to make sure everyone is on the same level of understanding. Then whoever knows material past that is benefiting.
- O. Perhaps a little more lecture could help.
- P. Class discussion of the more difficult and confusing topics (procedure for sequencing amino acids, for example) would help to make sure I knew the material or that I needed to look into it further.
- Q. In this format, there was little teaching for Dr. White to do. All learning was done within the confines of the group, unless there was a question to be asked of him. There is very little conventional teaching to improve upon.
- R. he could be more specific as to where we can find information. i realize that we won't always have someone to tell us these things, but it helps to have a little more guidance in the beginning
- S. Perhaps provide a brief lecture before each article that mentions the important topics to be learned in each article so the student knows what he or she should be looking for as they read and research.
- T. Is that before reading the article have the students do an exercise or lecture briefly about the article.
- U. I just feel that I was not given a fair opportunity to achieve a good grade in the class. I learned a great deal about the material covered before this class I knew nothing about sickle cell anemia or hemoglobin and now I know a lot. It just seemed that no matter how hard I tried and worked I could not earn an A on just one assignment and due to this I found myself becoming discouraged, not wanting to go to class, and not wanting to try as hard. So I suppose professor White could try to not judge students on their natural intelligence and give everyone a fair shot at doing well in his course, instead of stereotyping people as intelligent and hard working or not.
- V. Perhaps he could talk a little more about the articles, which he started doing towards the second half of the course. Maybe send out an email, overviewing the article.

- W. I believe that he should take a more active role in each group and make the group discussions a little bit more in depth to ensure each person got what they needed to out of the article.
- X. Although group learning was a good experience, I found sometimes, different groups would come up with different answers to the same learning issue. It was hard to determine whether or not your derived answer was correct if the tutor wasn't sure about the answer either. Maybe spend more time going over learning issues more thoroughly that groups of students don't go away with an inaccurate assumption.
- Y. He should emphasize more of the important material in class
- Z. Lecture more. Spend more time interacting with groups and aiding in explaining things.
- AA. He could lecture longer in the beginning of class
- BB. More involvement during class time by lecturing more.
- CC. The only complaint I have is the amount of teaching that is done. It is a good learning experience to read articles and research on your own however, there are times when more actual lecturing would be helpful. I feel a quick presentation of main/ important topics for each article would be extremely beneficial.
- DD. I have said this a few times, but I think that he should present at least one problem that he wants the students to work on during that class period. It would help students because sometimes they get caught up in minor details that aren't that important, and help them focus more on core ideas. They still will get to expand thoroughly on their other learning issues, but this direction that Professor White would be giving would help them think of better problems in my opinion.
- EE. More lecturing and a less ambiguous exam structure. The grading can be harsh at sometimes.

**CHEM-342 Final Course Evaluation  
 Numerical Responses Spring 2007**

**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	1	2	2	14	22	41 of 43	4.32	0.96
Percent	2	4	4	33	52			

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

Hours/week	0 - 1	2 - 3	4 - 5	6 - 7	8 or more	Total
Total	1	8	12	12	8	41 of 43
Percent	2	19	28	28	19	

**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	1	9	31	41 of 43	4.73	0.50
Percent	0	0	2	21	73			

**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	2	18	19	40 of 43	4.35	0.80
Percent	2	0	4	42	45			

**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	10	11	5	10	5	41 of 43	2.73	1.4
Percent	23	26	11	23	11			

**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	1	2	9	17	12	41 of 43	3.9	.97
Percent	2	4	21	40	28			

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strong Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	8	2	19	11	42 of 43	3.83	1.06
Percent	0	19	4	45	26			

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strong Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	13	16	4	5	2	42 of 43	2.18	1.17
Percent	30	38	9	11	4			

**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	Strong Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	4	12	12	9	4	41 of 43	2.93	1.15
Percent	9	28	28	21	9			

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

Scale text	Never	Rarely	Some times	Frequently	Always	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	0	0	6	35	41 of 43	4.85	0.36
Percent	0	0	0	14	83			

**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	Strong Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	1	11	8	13	8	41 of 43	3.39	1.16
Percent	2	26	19	30	19			

**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	3	12	11	9	5	42 of 43	3.03	1.17
Percent	7	28	26	21	11			

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strong Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	4	18	3	8	7	40 of 43	2.90	1.34
Percent	9	42	7	19	16			

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strong Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	2	15	14	7	1	39 of 43	2.74	0.91
Percent	4	35	33	16	2			

**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	7	16	12	3	40 of 43	3.18	0.98
%	4	16	38	28	7			

**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	5	28	7	40 of 43	4.05	0.55
Percent	0	0	11	66	16			

**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	0	3	6	20	12	41 of 43	4.00	0.87
Percent	0	7	14	47	28			

**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	0	18	21	41 of 43	4.41	0.74
Percent	0	4	0	42	50			

**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	21	15	41 of 43	4.22	0.72
Percent	0	2	9	50	35			

**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	0	3	24	13	40 of 43	4.25	0.59
Percent	0	0	7	57	30			

**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	0	28	13	41 of 43	4.32	0.47
Percent	0	0	0	66	30			

**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	4	1	23	14	42 of 43	4.12	0.86
Percent	0	9	2	54	33			

**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	3	3	8	23	5	42 of 43	3.57	1.04
Percent	7	7	19	54	11			

**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	3	6	9	15	9	42 of 43	3.50	1.19
Percent	7	14	21	35	21			

**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	7	24	7	42 of 43	3.81	0.83
Percent	0	9	16	57	16			

**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	3	13	26	42 of 43	4.55	0.63
Percent	0	0	7	30	61			

**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	12	18	9	42 of 43	3.79	0.87
Percent	0	7	28	42	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	3	11	2	17	9	42 of 43	3.43	1.29
Percent	7	26	4	40	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	7	22	5	4	4	42 of 43	2.43	1.17
Percent	16	52	11	9	9			

**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	6	9	17	8	42 of 43	3.61	1.05
Percent	2	14	21	40	19			

**3604 - Overall, I would rate this class:**

Scale text	Unsatisfactory	Satisfactory	Good	Very Good	Excellent	Total	Mean	Std. Dev.
Scale	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
Total	0	3	6	17	15	42 of 43	4.07	0.91
%	0	7	14	40	35			

**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	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
Total	0	2	4	21	15	42 of 43	4.17	0.79
Percent	0	4	9	50	35			

**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	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
Total	0	8	15	15	3	42 of 43	3.32	0.88
Percent	0	19	35	35	7			

**4329 The course was well organized.**

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
Total	0	0	1	16	24	41 of 43	4.56	0.55
Percent	0	0	2	38	57			

**4330 - The course textbook was very useful.**

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
Total	1	2	17	14	5	42 of 43	3.51	0.88
Percent	2	4	40	33	11			

**4331 - The course examinations emphasized understanding of the material.**

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
Total	0	0	3	17	20	40 of 43	4.43	0.64
Percent	0	0	7	40	47			

**CHEM-342 Instructor Evaluations Spring 2007  
 Numerical Responses for CHEM342010 for 07S - Instructor**

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
Total	0	0	1	12	28	41 of 43	4.66	0.53
Percent	0	0	2	28	66			

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
Total	0	3	6	17	15	41 of 43	4.07	.91
Percent	0	7	14	40	35			

**3427 - The instructor encouraged class participation.**

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
Total	0	1	1	3	36	41 of 43	4.80	0.60
Percent	0	2	2	7	85			

**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	7	13	18	40 of 43	4.15	0.98
Percent	2	2	16	30	42			

**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	2	4	8	13	13	40 of 43	3.78	1.17
Percent	4	9	19	30	30			

**4332 - The instructor's lectures were well organized.**

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	1	1	8	16	15	41 of 43	4.05	0.95
Percent	2	2	19	38	35			

**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	0	2	8	14	24 of 43	4.5	0.66
Percent	0	0	4	19	33			

**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	0	2	6	18	14	40 of 43	4.1	0.84
Percent	0	4	14	42	33			