

**Final Course and Instructor Evaluations**  
**CHEM-342 - Introduction to Biochemistry - Spring 2011**  
**Instructor: Harold B. White, III**

The following are the responses of all 34 registered students to the University of Delaware's on-line course evaluations conducted during the last week of classes.

Question	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total (34)	Mean	Std. Dev
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
The course was well organized.	0	0	0	13	20	33	4.61	0.50
The course textbook was very useful.	0	0	16	7	8	31	3.71	0.86
The course examinations emphasized understanding of the material.	0	0	1	8	24	33	4.70	0.53
The course emphasized understanding of the material rather than memorization.	0	0	0	6	27	33	4.82	0.39
The process-oriented guided inquiry (POGIL) activities (e.g. several examples given) should be used in future offerings of the course.	0	0	0	10	23	33	4.70	0.47
I preferred my group's first tutor to the one we had after Spring Break.	2	7	14	5	5	33	3.12	1.11
I think my group functioned better after Spring Break than before.	2	5	15	6	5	33	3.21	1.08
Overall, I learned a great deal in this course, including factual knowledge, principles of behavior, or skills.	0	0	0	12	21	33	4.64	0.49
It would be a good idea to form new groups after midterm.	8	11	5	7	2	33	2.52	1.25
Peer evaluation of student performance within groups was a worthwhile activity	0	1	10	16	6	33	3.82	0.77
My group would have done fine without a tutor-facilitator.	9	20	4	0	0	33	1.85	0.62
I think examinations in CHEM-342 should focus more on factual information and less on problem solving.	1	18	12	1	1	33	2.48	0.76
The assignments I turned in were graded and returned promptly.	0	0	0	0	33	33	5.00	0
A considerable amount of the material in CHEM-342 reviewed material I had studied in other courses.	3	6	5	15	4	33	3.33	1.19
It was a bad idea to change tutor-facilitators after Spring Break.	5	9	13	5	1	33	2.64	1.03
My jigsaw group's concept map reflected mostly the efforts of one or two group members.	5	18	2	3	5	33	2.55	1.30

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Question	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total (25)	Mean	Std. Dev
	1	2	3	4	5			
I think grades in CHEM-342 should be based solely on individual performance.	2	21	5	4	1	33	2.42	0.90
I talked about subjects and issues arising in this course with people not enrolled in the course.	0	1	17	11	4	33	3.55	0.75

I feel that I can apply the general principles I learned in CHEM-342 to problems in other courses.	0	0	2	18	12	32	4.31	0.59
I found the hemoglobinopathy assignment worthwhile.	0	3	2	17	11	33	4.09	0.88
As a result of this class my ability to find, read, and analyze information has improved.	0	0	4	14	15	33	4.33	0.69
I feel confident that I can read and understand research articles.	0	0	2	16	15	33	4.39	0.61
I am comfortable working in groups.	0	0	2	18	13	33	4.33	0.60
I feel comfortable sharing information.	0	1	0	17	15	33	4.39	0.66
I feel comfortable asking help from others.	0	4	3	15	11	33	4.00	0.97
I feel comfortable in relying on information obtained from others.	0	3	9	17	4	33	3.67	0.82
Given the opportunity, I would like to take another class designed like this one.	0	2	9	17	4	33	3.91	0.95
Discussion of the mystery molecules helped me make connections to things I had learned in other chemistry courses.	0	1	7	21	4	33	3.85	0.67
I found the course web-site to be a useful resource.	0	0	1	18	14	33	4.39	0.56
I found the quotations on the board thought provoking.	0	0	8	15	10	33	4.06	0.75
I enjoyed working in the jigsaw group for one week.	2	7	4	10	10	33	3.58	1.30
My group made use of the classroom library	1	10	6	14	2	33	3.18	1.04
I found the scratch-off group-quiz format a useful learning activity.	1	0	2	17	13	33	4.24	0.83
Having a group outing at the beginning of the course helped my group to work well together.	0	3	10	17	3	33	3.61	0.79

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Question	Unsatisfactory	Satisfactory	Good	Very Good	Excellent	Total (25)	Mean	Std. Dev
	1	2	3	4	5			
Overall, I would rate this class:	0	0	1	13	19	33	4.55	0.56

Question	1 - 0	3 - 2	5 - 4	7 - 6	8 or more	Total (34)
On the average, the number of hours per week I spend working on this course outside of class is:	0	4	10	10	9	33

### Essay Responses for CHEM-342

#### Comment on the course. Responses (25 of 34)

- I love the PBL style. In my opinion it is a much more effective style of teaching than lecture. My father teaches people getting their Master's degree in education how to be effective teachers and is ecstatic with the fact that I finally had a course where I wasn't just lectured at the entire time. It required a lot of work every night but I enjoyed doing the research and didn't want to let my group down. I wish more chem courses were this style.
- course was very interesting, and taught in a well structure way.
- Good course, didn't overload with work but still had a little to do for every class.
- I enjoyed taking this course a lot. It really teaches you how to think about what you read, ask questions, and make sure you thoroughly understand the material.
- Coming into the course, I thought I was going to hate problem based learning, because of the constant work required to keep up in the class rather than being able to pace myself through each exam. This requirement completely changed my study habits in all my classes, as I used to procrastinate until the last few days to learn a month's worth of material and then forget it right about the exam. Now, I'm ahead in all my classes and often find myself with nothing to do the night before an exam, instead of staying up all night cramming.
- It is well designed to force us to think and explore to find the answers, rather than us just being given everything we need to know.
- This course is different from courses I have taken in the past. The freedom that the student are given is both beneficial and detrimental. Overall it was an interesting experience.
- The course requires a lot of work. It can be frustrating at times to spend hours researching things but it is worth it in the long run. This course brought together all my prerequisite math and science courses and made me see and understand the relevance.
- The course was less about biochemistry aspects itself and more about applying information we've learned previously to tackle new issues at hand. Of course, aspects of biochemistry were part of the material we learned but not in a lecture- style format. This intro course was very helpful, however, in

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helping students learn how to work through problems and issues with difficult material that will later be very helpful.

- I enjoyed taking the class and I learned more than just hemoglobin.
- My favorite science course that I have taken at Delaware. Made me realize just how much I loved my major and got me excited about taking more biochemistry classes. The hemoglobinopathy paper, though a lot of work, was a great assignment that I thoroughly enjoyed doing.
- It tested your complete understanding of the articles presented in class and required a lot of outside knowledge within each subject material.
- Excellent first biochemistry course. It promotes the necessary thought process that needs to be used for all future classes in any field especially the sciences. Although, after the course I feel that the time spent learning about one topic in science makes it a very daunting task to truly understand the complete breadth of topics in science. Considering a whole semester was spent understanding hemoglobin, I am uncertain that this is a method that should be used for learning. Honestly, the actual knowledge gained from a semester of this course could be presented in perhaps 1 or 2 lectures in another course. I'm not saying the level of understanding would be the same but just putting that out there to think about.
- I have never taken a course quite like this before. I thought I would not like it at all, but that turned out to be very far from the truth. I enjoy learning in the PBL approach, though I don't think it's applicable to every subject. This course required much work outside of class, but it helped me discover how to understand more on my own and to ask more probing questions about subject material.
- Very refreshing way to learn chemistry. After sitting in lectures for hours and hours it's nice to be able to discuss material and getting different views on the material, not just writing down everything the professor says for an hour than trying to memorize it all later.
- I enjoy the course over all. I just wish the articles are more easy read
- Very interesting, by far my favorite.
- Extremely interesting. Learned so much and definitely helped me with studying abilities. Strengthened my passion for Biochemistry
- An excellent course, pretty much the only one that could ever keep me awake that early. About the textbook: I said neither because I did not buy the actual Biochem book suggested for this class, but I did have another and I found that very helpful. In terms of the course reader, that was excellent.
- If you didn't understand the material you couldn't do well in the course. I feel that I will retain this knowledge for the rest of my life rather than for 10 minutes after a test because of the way it was taught.
- HIGHLY recommended. personally, I took many science courses and was able to memorize the materials but I was never able to gather everything together. simple concepts such as equilibrium, I knew the definition but I learned to realize that I truly did not understand what equilibrium was. Being able to probe for deeper understanding of the material simply enhanced my academic career and the methods as to how I approach materials I do not understand.
- Great course, most interesting I've had yet. Not easy, but if you work hard you will do well.

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- The quizzes are rather difficult, perhaps disproportionately so. In the exams, one is able to explain fully his/her ideas and understanding of the material, but the multiple-choice quizzes are occasionally a struggle. Overall, though, I enjoyed the course.
- Great course, I would take it again. And I'm considering being a TA or group tutor next class!
- The quizzes were very difficult, but out of all my classes I learned the most in this one, and I enjoyed every moment of it. This was helped by the fact that I had an amazing group.

### **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?** Responses (29 of 34)

- CHEM342 is a discussion-based course with a strong emphasis on not only many disciplines in science but also group work and problem solving.
- Chem 342 was an interesting class which greatly improve ones skill in reading scientific articles.
- The point of this course is to strengthen the ability to find research, read articles, understand difficult concepts on your own and work well with a group.
- This course helps someone with basic knowledge in biochemistry get a better grasp as to what biochemistry is, and some of the topics covered by biochemistry. The class utilizes learning through reading articles about the progression of the understanding of hemoglobin.
- Learning about fundamental biochemistry concepts by using hemoglobin as a model.
- CHEM-342 is a course that teaches you how to synthesize information in order to gain a better understanding of what. One learns how to relate previous knowledge through new concepts in the perspective of the study of a molecule (hemoglobin).
- Although it is a self motivated course, it has changed the way I think about learning issues in every other class that I take.
- This course is about learning about how scientist came to discover and understand a particular compound. This course focused on hemoglobin as a way for us to learn about the discoveries that came about.
- This course is centered around the science of hemoglobin in a historical context. The structure of the class is nontraditional but does make the student think. The course requires a serious time commitment if you want to do well.
- A lot of work but in the end you learn facts and useful skills for the future.
- Chem-342 reveals the original experiments and findings that concluded the information found in the science text books we read today. It eliminates the use of sheer memorization and replaces it with deeper understanding and inquiry.
- The essence of this course is learning how to learn, the subject just happens to be about biochemistry-related items. The course utilizes prior chemistry and biology-related course material in a PBL format in groups to develop a deeper understanding of material while learning to work with others.
- CHEM-342 is a discussion based class where there are groups of about 4 students and a tutor. Every week or so an article is read and learning issues proposed. Learning issues are questions each individual had while reading the article that would provide deeper understanding of the article. Each

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issue is research before coming to the class. In class the group pieces the article together and helps each other understand what the article is stating by explaining what they know about a subject matter. The tutor is there to help guide the conversation and make sure that the information being shared is not incorrect.

- A group based course that brings together everything you've learned in your other science courses so that biochemistry can comprehensively be learned through the lens of hemoglobin.
- To further understand every day scientific articles to the best of their ability using the fundamentals of biochemistry.
- Chem342 is a course in which you learn how to analyze journal articles, discuss topics of importance, and question your own and one another's knowledge all within the context of hemoglobin in a group setting.
- As Dr. White says, the course is not about hemoglobin; it is about being able to combine past knowledge with new information to be able to understand how to learn and solve problems.
- CHEM342 is all about how much effort you put into the course. If you're fortunate enough to have a good group, which I did it was a great way to learn new material. As long as everyone does what they need to and aren't afraid to ask questions and give opinions the course is very easy to get through and you learn a lot on the way. Its like no other chem course you've taken before and you'll be very happy to get a break from the boring lectures of your other courses.
- The actual facts aren't important, but understanding why the facts came about is what this course is about. You must understand in the same way as Dr. White to get a very good grade.
- This course teaches you to think and to analyze. The point of the class isn't to know the material, it is to understand the material. It teaches you to dig deeper into the articles you read and ask questions so that you really understand the information.
- CHEM-342 will not be your typical lecture type course and you will learn how to learn.
- It is a problem based learning course focusing on all the aspects of science and how they apply to one main topic: hemoglobin.
- It is an individually directed learning experience; you can learn a lot or a little depending on how hard you work.
- This course focuses, not on what you are capable of memorizing, but on what you are capable of understanding. It promotes intrigue in what you are learning and stimulates you to go out and learn something more than what is expected of you.
- the purpose of the course is not to memorize the materials given but to actually understand the fundamentals of science. furthermore, you learn to utilize the basic concepts you learn in freshman year and to learn how to read a scientific paper and to ask for more profound questions, not the superficial definition questions.
- The study of hemoglobin through the eyes of various scientists as the mystery unfolds was not easy to grasp. It was, however, extremely interesting and though provoking - eventually, once something is understood, there is a rewarding feeling and you retain the information.
- This class uses hemoglobin as a medium for learning to read and analyze scientific articles and to emphasize basic biological and chemical principles.
- A class that may seem like it's all about hemoglobin and sickle cell anemia, but is actually about learning how to learn and work with a group.

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- CHEM342 is one of the best classes I have taken at UD. It strives to make you learn through group activity and self-teaching, and the rewards are endless.

### **Open Mic. Reflect on the course and identify those aspects that you like or think could be improved. Please suggest ways for improvement.** Responses (24 of 34)

- I found the POGIL activities really really useful as precursors to upcoming articles. I know that there is not always time to spend extra days on POGIL but I think you should try to use as many as you can. Personally, I HATED the jigsaw groups. I think it was a great concept but as it turns out, the new groups end up working poorly, in my opinion. I feel that this is a result of a lack of feeling of loyalty to the new group. People have no problem slacking off when they know they will only be with those people for a short amount of time. I believe the problem with any poor experience in the class is that too many kids do not want to be there. Honestly, I don't enjoy waking up early but I do it because I love my major and love 342. I don't really have any suggestions as to how to make more students like I am. Maybe if you made it clear that after 2 unexcused absences their grade would drop (ie from b+ to b) students would be more intent to go to class. You did make clear that attendance matters but maybe this clear rule would change the poor attendance. Also, if you told students that at the end of the semester they would need to distribute 100 points throughout their group as they see fit everyone would come prepared every day.
- The course can hand out more online informative sources When searching for learning issues, it was hard to find good liable sources.
- I liked the POGIL activities and the learning issues you handed out. I think that if you had handed out the rubric for the learning issues earlier it would be better. It sometimes is hard to tell what the teacher wanted in all of the assignments.
- I think that the group work with a peer mentor is a good idea, but I fell that a little more time can be used mentoring. Perhaps on the last day of any article a 15min period be set aside of pure QnA for Professor White where questions unanswered by the group can be discussed. Perhaps in these sessions Professor White can sum up or give a full description of phenomenon that seems to be difficult to understand, or was difficult for the groups to find on their own.
- I loved working in groups. It helped me stay focused in class (for the most part). It also is nice to hear how others explain different topics and we help point out what each person is doing wrong. I think the only improvement needed is a little more guidance from Dr. White at times, but there are loads of useful resources to help study and learn the course material.
- DO NOT CHANGE THE TUTORS AFTER SPRING BREAK!!!! I've learned about one fifth as much in my group from the second half of the semester after spring break compared to the first.
- I enjoyed the course and the way it was set up. However, there were points that I feel a little more guidance would have gone a long way. Maybe just starting with a brief summary at the beginning of class. I feel like people's experience from the class depended on how well their group worked together and attendance. Our group had pretty good attendance, with someone missing less than once a week, so I think that helped to foster a more positive environment. I know of other groups which had much more difficulty. I think learning issues are a good thing to have, but recognize that

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they, when done properly, are very time consuming. I enjoyed having to hand in learning issue for I really feel like it really forced me to stay on top of the articles and get the initial reading done.

- I enjoyed the jigsaw concept map portion of the course a great deal. In general I thought that the group discussion could use a little more direction. However, there were times when the group functioned extremely well and did not need assistance of any kind. A summary at the end of each article by the professor would aid in understanding and also calm the nerves of student who are afraid they may have missed something.
- For improvement, I think there should be a bit more student-driven conversations, although this can be difficult if the students are unsure of the material. It is then the responsibility of the individual to come in adequately prepared, which was sometimes not the case.
- My group had a lot of problems especially with attendance. It was frustrating when I was the only person that did not miss class. What was even more frustrating was when students in my group did not come to class prepared because they were too busy. I am a busy student but I make sure all my work is done especially in the group setting.
- The only thing I would maybe suggest is picking one of the articles covered after spring break and having students learn them with a different group just for that article. This way, in case someone does not like their group, they can maybe get relief for at least one article. I know that I really enjoyed the jigsaw groups but that involved teaching our home groups what we learned from jigsaw groups. What I am proposing is more of a switch day where everyone learns about the same article but just with a new group for that one week.
- This course could be improved by more participation from the tutors and Dr. White in order to help students to better understand material presented. Overall the course was very helpful in aiding my problem solving skills.
- The course could be improved by taking time maybe 3-5 class periods to lecture the material presented during the course to the students. This would refresh the ideas that were learned throughout the semester as well as give students a comparison of teaching methods. It may help students who do not learn well from PBL as well as reiterate the topics for those who have learned and understood the material.
- I like the idea of learning in groups. Discussions in class drew my attention to parts of the articles to which I had not previously paid attention. Tutors really helped keep the discussion on topic and made sure we had an understanding of the concepts; not just superficial knowledge.
- It can really be a burden if the other members of the group have to carry the weight of others during discussion and exams. This wasn't really a problem in my group but I could see it being very frustrating if it did happen. I'm not sure of any way around this but its important emphasize that people need to put in the effort and not leech off the members doing all the research. Other than that theres not much to improve. Maybe don't make the course at 8 A.M.?
- Partial credit on quizzes for explanations.
- I thought that the class was very interesting. I liked the topics, the way they were presented, and the manner in which they were learned. I felt that researching and coming to conclusions myself gave me a better understanding of the material than I would have if I had been lectured. It might help to do a brief review with the whole class after an article has been finished, but that may discourage students from putting in as much work.

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- Again, I believe a little more lecture would be very helpful. I don't think it was necessary to change tutors but I think it was still ok. I enjoyed working with others. I learned so much from this class. Switching groups up might be nice too. Overall, amazing course. A lot of work but it usually pays off
- I really enjoyed this class. At some points I was frustrated with our group dynamics, but most of the time we made good progress.
- I've never had more interesting conversations in any course I've taken, also, I've never learned more. Being able to read scientific papers is something everyone should learn, and this course did an excellent job of doing that. If I were to suggest anything I would say read more papers, maybe not necessarily for homework, but maybe suggest papers to read that would help generate more questions.
- I think a mandatory outside class meeting would have been good, at least speaking from my group experience. No one really wanted to outside the class but me. However, I believe extra hour outside class would have greatly benefited everyone. By making it mandatory, it alleviated pressure and the dislikes from the other group members that do not want to spend the extra time.
- It would be nice if the class did not have to be at 8am. In terms of structure, the only thing I can think of is more class activities
- More lectures. Also, some times I wish there was more time to discuss the more difficult articles.
- I felt that my jigsaw group didn't "click" like my normal group, and for that we didn't receive as good of a grade as I had wanted. Also the deadline for the jigsaw group concept map gave us not enough time, as we had other assignments for the class due as well.

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### Instructor Evaluation

Question	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total (34)	Mean	Std. Dev
	1	2	3	4	5			
The instructor demonstrated thorough knowledge of the subject matter.	0	0	0	4	30	34	4.88	0.33
The instructor presented the materials in an interesting way.	0	0	2	9	23	34	4.62	0.60
The instructor encouraged class participation.	0	0	0	1	32	33	4.97	0.17
I would recommend this instructor because of his/her teaching to others considering taking this course.	0	0	2	9	23	34	4.62	0.60
The instructor's lectures were well organized.	0	0	9	8	17	34	4.24	0.86
The instructor was helpful if you sought help outside of class. (Don't respond if you didn't.)	0	0	0	4	24	28	4.86	0.36
Overall, the instructor was effective in facilitating your learning of the material in this course.	0	0	0	12	22	34	4.65	0.48
Instead of group work, I think Dr. White should lecture more.	5	14	4	10	1	34	2.65	1.15

### Essay Responses for CHEM 342 for Spring 2008 - Instructor Harold B. White, III, Comment on the instructor. Responses (25 of 34)

- Dr. White is great. He was always willing to help me with any concern I had about upcoming or previous assignments, and he was always so nice and cheery. His attitude made me want to go to class at 8 in the morning.
- Instructor taught the class in a different way, but turned out to help learning a lot.
- There was a lot of times when I wish the teacher would directly answer the questions rather than only using PBL.
- Dr. White was a great resource for information and has an emphasis for learning the material over raw memorization.
- Very good professor. Seemed to really care about helping us out and excited about what he was teaching.
- Very knowledgeable. He is willing to help you understand the material not necessarily by giving you the answer, but asks questions to help guide your thinking. I appreciate his class a lot.
- Dr. White is a great professor. He really knows how to get a student to actually LEARN information, and not just memorize or understand the general basis of a subject. The level of understanding that he requires one to have about a particular topic is deeper than in any other course that I have taken.

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Yet, he doesn't make it seem any harder because of the way he teaches, which is mostly by asking US questions.

- Since this course was designed and set up differently than the average lecture course, it is hard to answer some of the above questions. I did not have much interactions with Professor White during class due to its nature but I feel the course challenged the students to think outside the box and try to find the answers for ourselves. Sometimes it was annoying not being told the answer because it could be hard to find the correct answer, though I understand why he choose to run class this way.
- I think that Dr. White is knowledgable and enthusiastic about this field of study. I do think it would be beneficial if he would schedule more "wrap up" lectures to make sure taht teh groups have all covered the most important aspects of the articles.
- Great instructor. Very nice and helpful.
- Professor White's class was one of the most fulfilling experiences I've had here at this University. He is extremely knowledgable of the material in the course and presented it in a unique and interesting way. He always challenged the class to think outside of its limits and go further and further into a deeper understanding. I learned more than just the material of the course; I learned how to participate in a group and become a contributing member, work with others, and effectively tackle subjects that I may or may not have ever seen before.
- I feel that students should have more of this type of class. I feel that many other non-science majors have class presented in this way but science students do not always get the opportunity to explore this part of learning.
- GREAT teacher that really does a good job of getting his students to know the material. Also, helpful outside of class and a very approachable man.
- The instructor clearly presented the material in which we were responsible for learning. At office hours , he was always available if i developed any additional questions.
- With a PBL class, the instructor's role is very limited. However, Prof. White did an excellent job of providing the necessary resources in order to promote group discussion and facilitate learning. When he did join the group, he was very knowledgeable in any topic that was being discussed and able to ask thought provoking questions.
- Very helpful; promotes understanding of material as opposed to superficial knowledge.
- Very knowledgeable, interesting way of teaching the class. Even though there wasn't much lecturing his method was effective.
- Unbelievable amount of knowledge. Very helpful and clear. Demonstrated purpose and group work.
- This class basically relied on our own investigations but he was approachable and helpful when we did have questions.
- Using PBL is, by far, the best thing he could have done to facilitate learning in this course.
- Really tries to help the students understand not just the superficial level of biochemistry but deeper understanding, not memorization, of biochemistry by utilizing fundamentals of biochemistry, chemistry, biology, and physics. Always probe for questions and help relate the materials to real life application.
- Great guy, awesome teacher, knows his stuff. Not much more to say.
- Dr. White makes PBL at 8 AM doable, knowing when to nudge us along to learning and when to stay out of the way of students' learning independently. I was surprised to find that I enjoyed this class.

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- PBL is a love hate relationship. At times I liked it because it wasn't a lecture and everyone was actively participating. Then at times we would get stuck and be unable to understand something. Dr. White does a good job at teaching PBL. he is smart and will help you on occasion if you really are stuck. I just wish that he would lecture more.
- Dr. White is knowledgeable, and makes students work for answers. He wants students to think for themselves, and learn how to be self-sufficient. He is a great teacher and I look forward to having hi again.

### **Identify or describe some way(s) that Professor White could improve his teaching (and your learning).** Responses (25 of 34)

- He is great at helping you arrive at an answer on your own. I love that he tells us about upcoming seminars and periodically checks in on groups to ensure the conversation is proceeding well.
- He does a good job inspiring his student to finding the answers.
- He is very helpful when you see him out of class. He is very smart and is always around for help.
- Professor White does a good job of explaining things and helping one discover the answer to questions one may have. I believe some topics may be better taught through lecture over group learning issues.
- Adding supplemental information and giving us time to figure things out for ourselves before giving us the answer
- He asks questions that make you really think about a particular subject. Also, he is a very motivating professor. Since the course is self motivated, this is a very important quality. He makes me actually want to learn and understand material because it is interesting, not because I have to for a certain grade.
- He forces us to learn and explore for ourself. Part of the reason I never put a huge amount of effort into my learning issues (though I did put a lot of effort normally I could have put more) was because I liked having learning issues that forced me to write out my ideas and questions. I felt this would help me read the articles more closely, and I know people who finished theirs earlier and wouldn't read the articles as well for the first day of class.
- Dr. White is clearly knowledgeable about the course and he makes an effort to inspire the students to learn. He tries to insert himself into the group work to gather information about how the groups are performing.
- Professor White helps to go beyond just memorization of material. He is very helpful regarding students concerns.
- Professor White challenges the class effectively and is extremely organized with his lesson plans. I have never been in a more organized classroom.
- Dr. White is very good at letting students take initiative without letting them out in the cold. When our group had some problems we were able to go and speak with him about it and he advised us with a plan of action but it was our responsibility to execute the solution.

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- I loved the PBL style of the class with POGIL activities. Sometimes the groups don't mesh together perfectly, but that is something that all of us will have to get used to in life. Perfect introduction to biochemistry and I feel much better about my major before entering the grad level courses next year.
- He was always available for helping students understand the material that was presented in each scientific article.
- Professor White does an excellent job of taking the time to organize groups and make sure everyone is working well and gaining from the group discussions. He is always helpful when the group is stuck on an issue and is able to facilitate the group's understanding of an answer. Rather than just telling the answer to you, he will ask questions that will lead you to figuring out the answer.
- Leads students to answers by asking them questions (ie: not giving them the answers but having them discover answers)
- Encourages students to learn for themselves which is obviously a useful skill to have for any class. Makes students try things they never have before.
- Good at asking questions to encourage you to realize the answer yourself instead of just answering the question and ending the discovery process.
- Relaying information back to other people. Getting his point across
- I really liked the POGIL exercises especially the ones that carefully guided us towards being able to answer a difficult question by asking simpler ones and allowing us to piece it together.
- He asks questions in a way that we can answer them ourselves which helps solidify our knowledge of the subject. He also gives answers when we are having particular difficulty with something so we can continue learning new things.
- instead of simply giving out the answer, he help us reason for the answer. In other words, he tries to probe for the answer by recollecting the basics we have learned from gen chem, biology, and physic and pulls the materials all together.
- He asks probing questions that makes students think, so when they figure the answer out, they do not forget it. He is able to teach an understanding of material, rather than just a learning of it
- He is very approachable and is able to explain difficult concepts well without seeming pretentious. All around, an entertaining sort of fellow who facilitated my learning (not necessarily by teaching) of more than I ever wanted to know about hemoglobin.
- Dr. White does an excellent job at making you think and learn something yourself rather than be told. This is very helpful in understanding the material in this course.
- Dr. White is organized, interested and genuinely cares about students. I especially like how he actively tries to get to know each student.

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

Responses (24 of 34)

- Honestly, I have no suggestions because I have no complaints. I stayed on top of the work, and I learned it on my own. People who struggle clearly slack off and there is nothing Dr. White can do about that. I loved everything about the course and would not change a single thing.
- Maybe to have a little more lecture. The group work is good, but a lecture once a week would be very beneficial.

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- I think that if he specified more what he was looking for in the assignments it would be helpful for students. Sometimes it is kinda cryptic as to what he wants in a paper or assignment.
- As stated previously I believe a little more time could be spent with lecturing.
- My only suggestion would be a little more guidance on what exactly we need to know because sometimes I get confused.
- There are only a few things I would recommend. One would be to post answers to the practice midterms and finals that are on his website. The second would be if he distributed papers indicating what we had to know or get out of each article. He does distribute learning issues, but I feel like a lot of them are irrelevant to the exams or are missing important information.
- I wish he would give us more answers sometimes, or direct us more so we could find the proper information.
- It would be helpful if Dr. White would lecture at the end of each article to make certain that each group has indeed discussed the most important aspects of the article. The way the course is structured now it is sometimes difficult to know whether or not you have gathered the right information from the articles.
- I don't think there too much more Dr. White could do. The class is designed well with no apparent faults.
- It is sometimes difficult to have enough time to prepare for this class especially the first part of the semester(pre- midterm) when I feel that we went over more articles. Sometimes I would get more stressed than I wanted to be and overwhelmed at the same time when I would have difficulties spending the appropriate amount of time needed for Dr. White's class and keeping up in my other classes.
- I liked his teaching style of introducing a quote for each class and guiding us by coming around to all of the tables.
- If there was slightly more lecture or hints as to what we should be looking up within each article , it would have been helpful.
- I feel that some time should be taken to have a classroom discussion on each article after group discussion takes place in order to make sure everyone has learned and understood the key learning issues for each assignment. This would promote overall classroom understanding as well as make the knowledge gained more uniform across the groups.
- Not too much I can think of, but possibly switching not only tutors, but also groups halfway through the semester.
- Although the class isn't only about exams and quizzes it would be nice to have a little more guidance on what to study for exams. The articles contain a lot of info and its difficult to decide whats important and whats not.
- He should lecture more, probably at the end of each article so that students will have a good understanding about that article
- I believe that there is a little too much group work. There were a few times when the group had unanswered questions ut unfortunately Dr. White could not get around to all the groups to answer them
- I'm still not convinced having a class that early builds character so much as a caffeine addiction.
- I can't think of anything he could do better.

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- out of the designated days for each article, if he could perhaps do a short lecture on the background (not that he doesn't do that right now) but with Stokes article, it was very overwhelming to read the article. Perhaps if he took the half of the first class to go over concept such as equilibrium once again, it would possibly alleviate the transition from going from lecture course to PBL course.
- I would like it if he would do a little more teaching to the class, possibly a few class activities. During exam review sessions he was very good at engaging the whole class while answering a question, and I feel that during class this would help as well.
- Can't think of anything. Sorry, I'm usually all about constructive criticism, but Dr. White helped me learn the material in such a way that it just worked for me.
- I wouldn't have minded a class lecture for each article to clarify some things we may have missed.
- n/a