

**CHEM-643, Intermediary Metabolism, Fall 2006**  
**Final Course and Instructor Evaluation**  
**HAROLD B. WHITE – Instructor**

**Narrative Responses about the course**  
**Question: Comment on the course.**

Very interesting course.

workload was heavy

There is no textbook, didn't like it.

The course was organized so as to effectively survey a number of metabolism topics. I had no complaints. I wish the case study assignment had been a bit more clearly defined earlier in the semester, though.

I liked this course. I liked the lecture portion more so than the PBL portions. I felt that with the lectures, I got more out of the class.

It was a fun course. I learned a lot more than I thought was possible in the class. It was tough but I fought through and I was successful.

The course was very interesting and I learned a lot. I also learned how to teach myself things well when we had problem sets.

very good course. Provide big image of metabolism and also interesting topic in metabolism.

I would have preferred more of the problem set/lecture format and less of the case studies.

I must say until now I haven't been a fan of PBL. I just feel that group work usually relies on a few people who do the work. However, after taking this course I must say I've reconsidered my opinion. PBL would be much more effective if other professors modeled their course after Dr. White. Also, this class wouldn't have been nearly effective without such good problem sets. After working long and hard on the problem sets I felt I couldn't possibly forget the material. I learned a lot from this course, and usually I don't agree with a PBL style. Also, I've become very interested in Intermediary Metabolism to the point where I am reconsidering med school and considering a PhD.

It was very interesting and unlike any course I have taken. It took many topics that we should have all already been introduced to and connected them. It was also good to have a group structure so that if members of the group had not learned the material previously, their group members can help make sure they don't fall behind.

Overall course was good. Major aspects of metabolism were included.

One of the most enjoyable courses I have taken here at Udel. A large amount of work is required, but you also learn so much, such as working on the Case Study assignment or homework problems. Doing the work makes you understand the material, rather than memorize a fact and forget it later on.

As to exams, you didn't have to study to hit the average. Intrinsic intelligence could achieve an easy score. I believe harder questions and more problem-based questions are necessary. Perhaps pulling questions based on papers from new literature would be better, as well as demonstrating the vitality of metabolic research.

The topics covered were the ESSENTIALS in metabolism. I learned more in terms of biochemistry in this course than any of my other biochemistry classes.

The material presented in this course can be considered very overwhelming, but I think Dr. White's strategy of emphasizing the patterns in metabolism was effective. I spent more time actively learning some of the important concepts instead of scrambling to memorize every structure of every pathway.

I love that the exams were open notes, because they were still challenging and forced students to show their ability in the subject. It was much more of a real-world scenario in that we could look things up, but still had to have a thorough knowledge of the subject.

Should be smaller class size. That would have promoted more discussion and participation during the lecture half. If this were the case, this would have likely been the best biochemistry course I've taken so far.

I thought the course material was great. I think it totally covered the important aspects of metabolism in a cohesive manner.

It was very interesting, but I wish I had easier understanding during class.

Tough course, but taught me a lot. Especially interesting was connection between pathways. PBL problems were tough, because one person would find all the answers online and spit them out without really stopping to understand or explain them.

The course was a LOT of work and out of class time. I probably spent two days on each problem set. I didnt know how to study for the tests. Go over material slower, stay on topic, and relate to students. Make sure they understand. Overall the course was interesting and I learned alot. I liked the problem sets because I had to research and really figure out the answer. I kind of feel like I dont have a concrete grasp on metabolism because we learned a little bit about a lot of different parts. the case studies and problem sets were useful. they dont provide concrete information for a student to know. they provide parts of information. the amount of time for class isnt enough time to completely understand a page of case study.

I like the PBL format because it allows me to direct my own course of study: I can learn as little or as much about the topic as I choose. Also, by working in a group, I learn to think about the problems from new perspectives and to become an overall well-rounded thinker. I do not like that since I am teaching myself the material, I can confuse the concepts or deceive myself by thinking that I fully understand the material that Dr. White expects me to learn after completing the problems. However, I am sure that if I asked questions of Dr. White more frequently, I would have identified the areas that I understood and those in which I needed to improve.

Course was interesting and I feel like I learned a lot. It was challenging but Dr. White pushes you to a level that you're able to acheive. Not to a level that is untangible.

This was one of the hardest courses I've taken so far. I am not a fan of problem based learning and feel that I personally learn more from normal lectures. I also felt as though I was never sure where the class was going because some lectures seemed to jump around. That being said, the class was presented in an interesting manner and did emphasize understanding of the material.

643 is a really interesting class. The subject matter is fun to learn and the case studies are really great ways to do that, however, it is a hard science and some lecturing should be done on the general topics as well.

**Question: Reread the course syllabus and provide some thoughtful feedback. e.g. Did the syllabus adequately describe the course? Are there aspects of the syllabus that are unclear or misleading that should be revised? What is missing that should be included? Feel free to discuss this question with your classmates.**

Syllabus is perfect.

the syllabus was one of the most complete that i have seen. very effective tool.

The syllabus mainly just described what we would be covering. I rarely looked at it because we were told what topic we would be covering in metabolism each week. I would say more...but I don't trust these evaluations to truly be anonymous.

I feel that the course syllabus started out to be a useful resource, but towards the middle of the semester, it changed a lot, so it was kind of useless.

Under General Comments and Grading section: Since enrollment has increased greatly since it has become required by undergraduates to graduate, the first sentence should be edited. It should still emphasize the outside reading and class participation though. Also in the same section, the final exam is not on our case study topic anymore.

the syllabus was very helpful. At first the case study was unclear, but with the examples in class it was ok.

The syllabus was helpful because if u missed a class you could go and learn about what you missed. I would have liked it if there were mot directions on how to do a case study on the website.

I pretty confuse with grading. The information in the syllabus regarding grading at ihe beginning is different from what you indicate in parenthese.

The syllabus very accurately outlined everything that was expected of us throughout the semester. I don't feel like there was anything left out.

the syllabus is very thorough

Very detailed, and constantly updated. Overall it was clear and easy to follow.

The syllabus describes the course objectives and material.

The discussion of the case study was very broad. Other than that, the website was really easy for me at least to navigate and extract any information i needed from it.

The syllabus seems thorough, but I think it should have a weekly list of topics. They should be broken down and summarize the topics that we cover.

I didn't know that the homeworks counted for so much more than the midterm. It was something easily overlooked, and it was not discussed in class. It should have been pointed out, and in my opinion, not been the case. The exams should be the majority of the grade.

The course is adequately described through the syllabus. The only suggestion is to include more details on the various requirements and what format is needed for the large case study project.

i thought the syllabus accurately described the course and gave a good idea of what to expect.

The syllabus was well organized except the due date for the case study project was little confusing to some people. I heard people thought it was monday instead of the friday of the week before. But otherwise, very well organized and easy to access.

The syllabus summarized the course pretty well. The syllabus was pretty clear on the homework assignments, the intent of the course, and how the final case study was to be set up.

The syllabus is clear, accurate, and detailed. I would recommend updating the schedule when class timeline changes.

Yes, the syllabus adequately described the course. In the "General Commemnts and Grading" section, it mentions that a follow up final exam (worth 20%) 'based on your presentation topic during the final examination week.' This is unclear to me. Does it mean that the final will have section or an entire half related to my case study problem which I presented? This sentence need to be clarified. Also in the "General Commemnts and Grading" section, the midterm is listed as constituting 15% of the grade; however, in the "Midterm and Final Exam" section, it is credited with 20% of the grade. Which is correct?

The syllabus adequately describes the course. I don't think that there is anything missing, unclear, or misleading.

I found the syllabus to be a useful tool. It describe all the needed information such as meeting times, office hours, etc, and also gave a detailed description of the calander of the course.

Yes, the syllabus more than adequately described the course.

Yes it did. NO, the syllabus is pretty clear

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

Group quizzes don't reflect what I know. I think low quiz grades indicate group disunity. For case studies and any other open question, need to have one day to go over the topic to make sure everyone got out of it what they are suppose to.

the class should only contain undergrads because its not fair to be compared with people who have an advantage.

I don't like PBL, I feel its research, and who wants to research specific things that they aren't interested in. I did however enjoy doing the final case study, because it was a topic of my choice.

I am really not a big fan of PBL. I felt that the days that were lecture based I learned a lot more. I also felt that the homework was very time consuming. With a full load of classes chem643 was a lot of work. In the end I did learn a lot and I did find the materail very interesting.

There was not much that could be improved. It helped when Dr white handed out notes about what we were going to do because sometimes i had trouble copying down the notes and the pathways and pay attention at the same time.

I like the problem set because it is complicate which is good for learning. I think group quiz is good. However, I think case studies don't provide much discussion if students don't prepare befora class. So, I think you should give a guidline or reading assignment before doing case studies.

I really enjoyed the subject matter of this course a lot, and it was definitely one of the best classes I've taken at UD so far. The fact that this class is now over makes me really wish that there was a CHEM644. The one thing that I think could significantly improve this course is to eliminate the case studies and have it just be based on lecture and problem sets. That was the section of the course that I feel was most helpful.

The case studies were an interesting way to learn material. I really liked the photosynthesis one. I felt that I did not learn much from

the amino acid metabolism one. Maybe there is a better case study that could be substituted.

Final cast study project: I had a very good understanding of my topic. Yet I thought the hardest part was writing the case study questions. It's hard to determine what should be included and what shouldn't be. I think I would have expressed more knowledge and understanding had the assignment been to write a review on the topic and its metabolic interactions. If you keep the current assignment, I would suggest to require students to have thier case study questions written before they meet with you. I had an outline but if I had the actual case study with out my teaching notes done I think the time spent would have been more productive.

Why bother? Nothing will change. You've clearly already made up your mind that PBL is the new way to teach, despite student response.

I feel that I did not get a good handle on photosynthesis from the group work on it. Everything else was well-taught and interesting.

I like the way the first half was set up ALOT. The lecture format definitely helped out with completeing the problem sets. The second half of the course was also good, but I found myself not having enough time in class to understand anything. I know it isn't possible to make the class longer, but it would definitely help.

I'm not a fan of group quizzes. They were the source of resentment in my group. There were group members that did NO research for the class all semester, and held us back because we had to explain everything. The case study was a fantastic assignment, but I feel as though students need to be motivated to do more earlier. Many of my fellow classmates procrastinated and didn't learn much from it because they did it over Thanksgiving break. Overall, the course was fantastic.

Tests were geared less on ability to think like a scientist and did not always relect the amount of work put into the course. That is both good and bad. Case study was a good idea.

Maybe some concrete answers here and there may benefit students that are confused on various topics covered in case studies or hw's

I LOVED this course (and Dr. White as a prof)! I think it was adapted very well for the large class size. One thing I would suggest is forcing the students to start with the case study earlier...maybe having them turn in rough drafts of each phase at separate dates...just a thought. Thanks for a great semester!

Although students should have no excuse for the early class time, I think that changing the class time might help a little bit.

The PBL problems are kind of interesting, but I didn't learn a lot from them. I feel we should have had half a class to work on them, then a lecture class to explain what we should know from each one. Too many times my group rushed through the case studies yelling out answers and ideas, and I didn't have time or didn't know what was important to write down. Other than that, I learned a lot from the homework assignments, I think those are valuable learning resources. Also, the case study was an interesting, if very challenging, way to learn a lot about a specific aspect of metabolism.

I think i've said all I need to say.

I like the PBL format and group work. I did not like the exams because I was not directed into discovering what things are important about a given topic. An improvement to the course would be to direct students to the fundamental concepts of a topic (maybe in a subtle manner that maintains self-teaching) without telling them "this is what you must know" and without telling them how the concepts work. the students can teach this to themselves. This way students may not feel so lost when taking exams, as if they were not given a chance to adequately prepare for and do well in the exams.

I liked the problem sets, I thought I learned a lot from them. I just don't think a problem set should be assigned every week. Every other week would be better. I don't really like the group work, maybe because I feel as though I didn't have a good group, but I wish there was a lecture/class discussion after every case study. That way we all know what we should have learned from the case study. I think making the class later in the day will help me, personally, work better.

The one thing I wish had been done differently is that the homework problems were never gone over. I thought for the amount of time we all spent on the problems (I know I would spend well over five hours a problem set) they would just be handed back and that was really it. Spending a half a class going over some of the problems in detail would have been more helpful.

It was good. I liked it but i think a little more instruction would be beneficial. Also, very little if any assignments should be given during the second half of the course b/c the case study takes a long time.

## **Question: In a sentence or two, describe or characterize CHEM-643 to someone who might consider taking the course.**

Be prepared to put a lot of time in the course. However, you will get a lot out of the course.

you have to like chemistry very much. be ready to do a lot of independant work. make sure you have friends because this class is a lot harder if you cannot work with other people.

Be ready to do more research than ever. And don't expect Dr. White to hand you any answers.

CHEM-643 is essentially a chance for biochem students to actually use a lot of the concepts they labored their way through in organic and biochemistry courses. Since my reason for choosing the biochemistry major was to actually learn \*biochemistry\*, this was my favorite course out of the entire major. However, students who are not as interested in biological processes as I am should consider not taking this course. The course requires a lot of work, and if a student found the course uninteresting the class would probably be quite a chore.

It is a useful course in learning about intermediary metabolism. I learned a lot of information in this class.

CHEM643 is a course that stresses the biochemistry of the major cycles in the body that are important for biological function as well as the minor cycles.

In this course you will learn the entire chemical aspect of how different chemicals and compounds are produced, and their function within the body.

I would take this course because you will learn a lot about metabolism, and about how to actually learn. You will have to put in a lot of time though.

Integration of metabolism and study on interesting topics in metabolism.

CHEM643 is a lot of work, but you really learn a lot and it's well worth it.

This is a very group-oriented course that relates many of the common pathways in metabolism and promotes understanding as a whole.

A detailed examination on 4-5 specific topics of intermediary metabolism.

A very interesting course, while requiring a lot of outside work, stimulates learning and understanding the material. Great course.

A series of lectures followed by group work which tangentially relates to topics somewhat discussed in class.

This course requires a good amount of effort but is well worth it. I feel that I got a deep understanding of the interconnectivity within biochemical systems.

You take the chemistry you learned all through college, and the topics and methods you learned in molecular biology and you apply them to metabolic errors. You learn a lot about medical conditions.

Be prepared to work. Don't be intimidated by the difficulty of the subject, keep plugging away and ask questions.

Course geared towards the intuitive understanding of metabolism

The class is constructed to teach various metabolism in the body and equips you with the knowledge to learn about them on your own.

Chem 643 is a comprehensive class, overviewing many extremely important and fundamental aspects of metabolism. The course is formatted with one part PBL, facilitating group learning, and the other part lecture style, allowing for individual discovery.

Very well planned and organized course.

A tough class that teaches you and forces you to teach yourself more than you would ever want to know about metabolism. Interesting if you're into that sort of thing.

The course is difficult and requires a lot of time. However, it is also interesting and very informative. It provides a link between classes and many real life situations. The course gives a lot of practice in reading, analyzing, and citing scientific journals. I think it's fun to be able to read a scientific journal article and actually understand what it says.

Intense course: You must invest lots of time to study for this course. Dr. White has very high expectations of his students.

CHEM-643 about metabolism (pathways, enzymes, etc.) and it is half lecture half group work. It's hard and it's a lot of work but you will learn a lot from this course.

This class is a problem-based learning course that focuses on both lecture and group problems. The homework problems and case study assigned were very difficult but did facilitate learning of the material.

Survey of metabolism with emphasis on recognizing general pathways

It is a very interesting class. You will learn a lot but it's hard and you teach yourself.

## CHEM-643, Intermediary Metabolism, Fall 2006 Final Course Evaluation - Numerical Responses HAROLD B. WHITE – Instructor

**4650** - I am a

Scale text	Graduate Student	Undergraduate	Total
Total	6	29	35 of 36
Percent	17	82	

**4651** - On average, I spent \_\_\_ hours a week outside of class on work related to CHEM-643.

Scale text	>12 hours/week	9-12 hours/week	6-9 hours/week	3-6 hours/week	<3 hours/week	Total
Total	4	8	12	8	3	35 of 36
Percent	11	22	34	22	8	

**4629** - I found working on the homework problems in the first half of the course to be a valuable learning experience.

Scale text	Strongly disagree	Disagree	No opinion/Undecided	Agree	Strongly Agree	Total
Total	0	1	1	9	24	35 of 36
Percent	0	2	2	25	68	

**4630** - I found working on case studies in the second half of the course to be a valuable learning experience.

Scale text	Strongly disagree	Disagree	No opinion/Undecided	Agree	Strongly agree	Total
Total	1	5	2	16	11	35 of 36
Percent	2	14	5	45	31	

**4631** - I learned more working on the homework problems than I did working on the case studies.

Scale text	Strongly disagree	Disagree	No Opinion/Undecided	Agree	Strongly agree	Total
Total	1	1	7	11	15	35 of 36
Percent	2	2	20	31	42	

**4632** - Based on things I learned this semester, I would really like to learn more about intermediary metabolism.

Scale text	Strongly disagree	Disagree	No opinion/Undecided	Agree	Strongly agree	Total
Total	0	1	4	13	17	35 of 36
Percent	0	2	11	37	48	

**4633** - Instead of case studies and group work in the second half of the course, Dr. White should have lectured for the whole semester.

Scale text	Strongly disagree	Disagree	No opinion/Undecided	Agree	Strongly agree	Total
Total	3	12	8	6	6	35 of 36
Percent	8	34	22	17	17	

**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	2	33	35 of 36	4.94	.24
Percent	0	0	0	5	94			

**4634** - A considerable amount of the material in CHEM-643 reviewed material I had in other courses.

Scale text	Strongly disagree	Disagree	No opinion/Undecided	Agree	Strongly agree	Total
Total	1	13	7	11	3	35 of 36
Percent	2	37	20	31	8	

**4635** - I personally learned a lot researching my term case study assignment.

Scale text	Strongly Disagree	Disagree	No opinion/Undecided	Agree	Strongly agree	Total
Total	0	2	1	13	19	35 of 36
Percent	0	5	2	37	54	

**4636** - I found the work load in this class to be excessive.

Scale text	Strongly disagree	Disagree	No opinion/Undecided	Agree	Strongly Agree	Total
Total	1	12	5	15	2	35 of 36
Percent	2	34	14	42	5	

**4637** - My grades on the assignments reflected the skills and knowledge I have developed in this course.

Scale text	Strongly disagree	Disagree	No opinion/Undecided	Agree	Strongly agree	Total
Total	1	4	3	19	8	35 of 36
Percent	2	11	8	54	22	

**4638** - I frequently talked about topics from this course with friends and other people not taking this course.

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	4	9	14	7	35 of 36	3.63	1.03
Percent	2	11	25	40	20			

**4639** - I feel confident in my ability to learn what I need to know to understand issues in intermediary metabolism.

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	3	18	12	35 of 36	4.14	.81
Percent	0	5	8	51	34			

**4640** - I would prefer that the course had a PBL format for the entire course rather than just the last half.

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	10	17	5	1	2	35 of 36	2.09	1.04
Percent	28	48	14	2	5			

**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	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
Total	20	12	2	0	1	35 of 36	1.57	.85
Percent	57	34	5	0	2			

**4642** - Other members of my group did their fair share.

Scale text	Hardly Ever	Occasionally	Sometimes	Frequently	Almost Always	Total	Mean	Std. Dev.
Scale	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
Total	1	3	0	9	22	35 of 36	4.37	1.06
Percent	2	8	0	25	62			

**4643** - The instructions on writing a case study problem were insufficient guidance for me.

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	2	16	6	7	4	35 of 36	2.86	1.17
Percent	5	45	17	20	11			

**4644** - I would prefer if this class met in the late afternoon.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	4	11	6	8	6	35 of 36	3.03	1.32
Percent	11	31	17	22	17			

**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	1	1	0	12	21	35 of 36	4.46	.89
Percent	2	2	0	34	60			

**4645** - I liked the structure of the quiz with an individual response followed by group response.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	0	3	14	18	35 of 36	4.43	.65
Percent	0	0	8	40	51			

**4647** - I would recommend this class to other students.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	1	1	4	11	15	32 of 36	4.19	1.00
Percent	3	3	12	34	46			

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	1	2	0	8	23	34 of 36	4.47	.99
Percent	2	5	0	23	67			

**4329** - The course was well organized.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	0	1	2	15	17	35 of 36	4.37	.73
Percent	0	2	5	42	48			

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total	Mean	Std. Dev.
Scale	1	2	3	4	5			
Total	2	0	8	6	16	32 of 36	4.06	1.16
Percent	6	0	25	18	50			

## **CHEM-643, Intermediary Metabolism, Fall 2006** **Final Instructor Evaluation - Narrative Responses** **HAROLD B. WHITE – Instructor**

### **Question: Comment on the instructor.**

Great instructor. Learned a lot both from him and on my own, which students were forced to do.

dr white is very knowledgeable and knows the material

For his PBL approach, he pushed more then he taught.

Dr. White is probably the best instructor in the chem/biochem department. His courses are extremely demanding but well worth the effort.

Dr. White is a very good professor. He is able to get the material across in an understandable way when he lectures.

Dr. White is a very helpful teacher who knows a lot about the subject. He is always available to help out with anything. He is one of my favorite teachers on campus.

Dr. White was my favorite instructor here. He was extremely helpful and i enjoyed his class. i have never learned so much in a class before.

Very well organized. help student to participate in class.

Dr. White gave us a lot of work every week, and as much as we all loved to complain about it, in the long run, I think it really facilitated our learning of the material. Although it was hard to see sometimes, he is genuinely interested in having his students learn as much as they possibly can, and I really enjoyed that. Overall, I think Dr. White was a very good professor.

As a senior looking back on all my previous classes I would have to say hands down Dr. White is the best professor I have had. He presented material in an interesting fun-to-learn way. I think some students have taken for granted how boring this class could be. I have learned so much in this semester than I have in most of my other courses.

He does a good job. Sometimes he moves too quickly. For example: drawing a log mechanism on the board while commenting on reasons for why things happen the way they do. I cannot write both the mechanism and the reasons simultaneously, so one gets lost in the scramble.

Overall Prof. White is extremely knowledgeable on the subject matter. Sometimes when the group is stuck and asks for the professors help a common response is something like "if you were an enzyme what would you do?" I have no idea how thats supposed to help answer our question.

One of the best instructors I have had in my entire educational career. He does everything right, and I learned a great deal of information in this course.

I feel that a reliance on PBL in a class of this size is unrealistic. PBL requires direct instructor participation, and that is simply unfeasible in a class of this size. I don't learn well using PBL and I know there are others in the same situation. The class as such is tailored so that those who are the best in a group teach to the others. My group was monopolized by one person, and I felt like the thinking was done for me, because I didn't have the chance to speak up. No one I know of works on case studies outside of class simply because they don't have to. I feel that I could have learned a great deal more in this class if it was lecture based. As it is, we wasted a great number of days doing nothing relevant, in my mind, to metabolism. I am reminded of what Dr. Begley said in class, that each person has an individual learning style and that the professor must endeavor to satisfy all of them. In this class square pegs are jammed into round holes and made to appear to fit.

Hal White has been the reason why I really wanted to ever learn anything in Biochemistry. I am so used to knowledge being thrown at us, that teachers forget to emphasize how we relate to the topics, and Dr. White always had some way to introduce us to things we all know of, but don't really know anything about so we wouldn't lose sight of why the topics are important.

I have taken both chem342 and chem643 with Dr. White, and I can honestly say that he has been my favorite professor here at the university. His style of teaching is unique in that he relies heavily on PBL and group work, but it proves to be very engaging. It's also very obvious that he has a strong desire for everyone to learn. Most professors will just lecture, and evaluate through tests. Dr. White spends a great deal of time trying to find the best possible way for students to learn, and it shows.

Dr. White is always an amazing professor. Though one WORKS HARD in his classes, one comes out of the class feeling as though he/she can write a text book on the subject. He's an asset to this department. He's always fantastic.

Understands that people learn in different ways.

I look up to this man and think that he is an incredible teacher. I can not imagine my undergraduate career without him as an advisor, teacher, and mentor. Thank you Dr. White for a great class, I wish I would have gotten to take more than just two classes with you.

Has an incredible, sometimes intimidating knowledge of the subject at hand. Taught metabolism fairly effectively, but class needs a little more structure.

Dr. White is very knowledgeable, caring, and helpful. Sometimes even funny. :-) He does talk and write molecules a little fast in lecture sometimes and sometimes expects students to have a prior knowledge of compounds in metabolism. I guess in a 600 level course, the students should have some prior knowledge. However, he was aware and concerned about the students that didn't have prior knowledge. The lectures, especially in the beginning of the course, seemed to be unorganized.

Dr. White is a very nice man. He expects his students to have a passion for Intermediary metabolism as he does. Thus, he presents case studies about real, present day and recently historical problems to spark an interest in students to learn something more about biochemistry and metabolism. He does a good job as a professor.

Dr. White knows almost everything! If you were to ask him a question he would know the answer. Most of the time he would respond with a question to get you to think about it and come up with an answer yourself. He uses his case studies to present the material which is a more interesting way than lecture. The way Dr. White designs the course is very different than other courses. You have to work a lot harder yet you learn and retain a lot more.

Dr. White was very knowledgeable about subject material. However, I do not feel as though I learn as much from a PBL type course such as CHEM 643 as I do from normal lecture type classes.

Very enthusiastic and interested in making students learn

Prof. White is a great professor. He is very knowledgeable and tries to get students to learn for themselves. However, sometimes there is a lack of understanding by the student and he doesn't always cover the topic afterwards.

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

Encourages outside learning.

he elicits discussion better than anyone

Dr. White excels at presenting information in a multitude of ways, rather than in a single format, so that success in his classes is dependent only on how willing you are to work, not on how well you fit an instructor's teaching style.

He is always free to help out with anything. He is very friendly and cares about his students.

Dr. White is always extremely organized and is so smart on the subject that he can help you with anything.

Problem-based learning. Integrate all the information that students should learn.

Dr. White is very good at presenting information to you in a way that probes questions and doesn't reveal everything right away. He also never ceases to amaze me with the wealth of knowledge that he always seems to have about a wide variety of topics.

Dr. White, as stated above, presents dry material in an interesting way. I enjoyed the class and looked forward towards change of topic because I knew something thought provoking was soon to come. Also, his material was difficult, but we were given enough time to do it. When I completed a difficult question on a problem set I felt rewarded and haven't forgotten any of material. Just by working on interesting thought provoking problems I learned concepts that will be engrained in me for a long time to come. Dr. White has a really good system for teaching.

It is good that he gives example of where the mechanisms and molecules that we are talking about are used so that we have a point of reference.

Prof. White is very knowledgeable on what seems like every aspect of metabolism. An effectively teaches a large array of topics a fair amount of detail.

He uses interactive learning to help us better understand what we are supposed to be learning about

He stimulates learning from the questions he ask, whether in class, problem sets or PBL problems. The course makes you think, rather than memorize, and Dr. White stressed that a lot. Also, it was very helpful out of class and always easy to find.

He is very good in one-on-one discussions.

Makes class interesting by linking science and every day life.

Forcing us to really delve into a topic. If we didn't, we would all fail. I always found myself wanting to learn more about a topic because I never knew if I knew enough. I suppose Dr. White did a really good job of motivating us?

The case studies he utilizes as teaching tools are very engaging. Through group work, everyone is forced to participate.

Problem based learning is fantastic. He always encourages us to be creative with term projects. He guides us in learning and does not spell things out for us.

Making sure that everyone is intellectually involved in the material

Professor has lots of knowledge on the subject of biochemistry and is able to guide students in the right direction to answer specific questions.

Problem based learning is a fantastic tool. I think Dr. White thoroughly stimulated all of us and encouraged cooperative learning.

Willing to help students in every aspect was great.

Knows almost everything there is to know about metabolism and biochemistry in general, it seems.

Dr. White writes compounds very well and knows his metabolism! He is pretty good at relating metabolism to students. Although, he talks to fast a lot of the time.

Dr. White incorporates fun ways to get every student's participation in class. He selects case study problems that take students' interest beyond studying how Biochemistry works. The problems leads students to explore why the problems are important in today's society as well as foundational aspects such as how the problems was discovered. Dr. White really stimulates inquiry in students as he challenges them to develop their questioning and seeking skills.

Dr. White was very good at asking the right questions in order for you to come up with an answer. He is also very good at making his students look deeper into a problem rather than stopping at a superficial level.

He is very knowledgable on subject material, and it is obvious he cares about his students and wants them to succeed. His lectures were well organized.

stimulate students to learn. Puts metabolism in the bigger context.

He makes sure you get the opportunity to show what you learned previously by teaching yourself.

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

After each case study, have the whole class discuss to ensure all the students understand the case study.

On case study problems give a list of the major ideas we should have got out of them since it is based only on group knowledge and direction.

maybe less material and focus on the rest

He is so knowledgeable. I think he could improve his teaching by slowing his lectures or adding more mechanisms online ahead of time so we can focus on what he is saying and less on writing.

His lectures are based on PBL, in my mind he didn't "teach" us, he just hinted on topics when we were stuck.

Rearrange groups after each case study.

I'm personally not a fan of problem-based learning, but that's probably just me. I don't feel that I retain the information as much when we have PBL assignments.

Dr. White could go over the case study problems after we finish them to make sure we understood everything and were answering the questions in the way he wanted. Other than that, he was very helpful in facilitating us while we worked on the case study.

I feel that with PBL there is still a lot of down time that is wasted. I still prefer normal lectures, and I feel I might have understood the material more this way.

The only thing I had a problem with was that he went too fast sometimes in class and I couldn't pay attention and write the notes down at the same time

Maybe reading assignment on specific topic is needed for preparation and discussion for next class. Maybe provide key for problem sets to used in preparation for exam.

I feel like I learned a lot more the first half of the semester, when we had the individual problem sets coupled with lecture. This allowed us to be able to work things out on our own (the purpose of PBL), and then in a group if needed, but the lecture during class helped to give structure to the learning. Although the PBL case study problems of the second half of the semester were helpful, and I did learn some things from them, I feel like the problem sets and lecture combination was the most helpful. I never felt like the case studies provided enough structure to learning, and it's most helpful for me when I can see a clear path or direction in what I'm trying to accomplish.

Although Dr. White provided much of his material online one criticism is his lecturing style. It is too fast and often times difficult to keep up. Students aren't used to drawing these carbon figures it takes time. Many times I had large gaps in my notes because I couldn't keep up.

I felt that sometimes critical information is not presented in class. We may be expected to find it on our own, but then he should go over it to make sure that we did indeed get it right.

More lecture less PBL. I feel that I learned much more with lecture and weekly assignments than the PBL. The weekly assignments were difficult and I hated doing them, but I learned much more in the first half.

Lecture more so that we know if the information we have looked up and learned is correct

I enjoyed the lectures and homework assignments a great deal, however I was not a fan of the problem based learning aspect of the course. Maybe lessen the amount of PBL problems and do more lectures/hw problems?

More lectures, less PBL IN CLASS. Have case study problems be homework assignments/group projects and group individuals up by ability to work outside of class together. Less wasted time like this morning when we went over how people did case studies. It just wasn't relevant or helpful in anyway.

Sometimes the topics are so abstract the way the answer connects to the question. For the more abstract ideas or harder to understand topics, it would be nice to have a day of question and answers to Dr. White concerning the harder topics. Also, there isn't enough time in 50 minutes to do anything productive sometimes. It might be easier to rearrange the class time where we can spend more time on the actual case studies.

With any metabolism class, many of the lecture periods consisted of simply copying pathways from the chalkboard. Although some already are, but if all of the pathways referred to in class were made available to the students, more time could be spent understanding them and less time spent copying them down.

Sometimes the problem sets felt overwhelming. At the beginning of the semester I questioned whether I was in the right place because I felt like I was spending 15 hours a week on his problem sets alone. However, I did learn a huge amount from them.

More organized lectures

Provide hard copy answers for the questions and case studies asked

I think one thing some people had trouble with was the pace at which the class moved. Those of us who took 342 expected this however the first half of the semester was quite a shock with the problem sets every week.

Maybe if he could break the material down for students to understand easier during the morning time.

Assumes students know more than they actually do...simplify some explanations, slow down on some explanations of material.

talk write molecules slower, make sure students understand a concept or pathway, go through pathway steps slower, relate the metabolism to real life issues.

He should have a formal review lesson after each new case study in which he presents the concepts that he believes are most important in understanding the biochemical processes. After these sessions, students can supplement what they've learned on their own and in groups with the information Dr. White presents, to make sure they have grasped the important features of the topics. This would greatly help students in preparing for the midterm and final exams.

I think after the groups work on the case studies that there should be a class lecture to make sure we learned everything that we were supposed to learn. Also, the problem sets allowed me to learn a lot, however, I don't think it should be given every week. It took a lot of work and time to complete the problem sets and it was hard to give that much dedication week after week since there are other assignments in other classes.

Sometimes the lectures moved way too quickly and it was difficult because there was no set readings in textbooks to read beforehand or go back and read afterwards to reinforce what was being taught. Because the lectures moved so fast, it was sometimes hard to keep up and copy all the structures.

Spend some more time on the wrap-up day of case study. Sometimes its hard to determine how much information is expected to be learned from the case studies

Do more lecture round ups. There needs to be some given information to assure or deny that the students really know what they are supposed to.

**CHEM-643, Intermediary Metabolism, Fall 2006**  
**Final Instructor Evaluation - Numerical Responses, HAROLD B. WHITE - Instructor**

**4648** - I would recommend Dr. White as a teacher to other students

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	2	10	20	34 of 36	4.41	.86
Percent	0	5	5	29	58			

**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	0	2	33	35 of 36	4.94	.24
Percent	0	0	0	5	94			

**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	1	1	14	19	35 of 36	4.46	.7
Percent	0	2	2	40	54			

**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	0	0	3	32	35 of 36	4.91	.28
Percent	0	0	0	8	91			

**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	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
Total	0	0	1	9	22	32 of 36	4.66	.55
Percent	0	0	3	28	68			

**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	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
Total	1	2	1	11	20	35 of 36	4.34	1.00
Percent	2	5	2	31	57			

**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	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>			
Total	1	3	2	7	21	34 of 36	4.29	1.12
Percent	2	8	5	20	61			

**4332** - The instructor's lectures were 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	7	9	18	34 of 36	4.32	.81
Percent	0	0	20	26	52			