

CHEM-643, Intermediary Metabolism, Fall 2009
Final Instructor Evaluation - Numerical Responses (24/25)
HAROLD B. WHITE – Instructor

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean	Std. Dev
Scale value	1	2	3	4	5	4.96	0.20
Total	0	0	0	1	23		
Percent	0%	0%	0%	4.2%	95.8%		

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean	Std. Dev
Scale value	1	2	3	4	5	4.54	0.51
Total	0	0	0	11	13		
Percent	0%	0%	0%	45.8%	54.2%		

QID 3427 - The instructor encouraged class participation.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean	Std. Dev
Scale value	1	2	3	4	5	4.79	0.42
Total	0	0	0	5	19		
Percent	0%	0%	0%	20.8%	79.2%		

QID 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	Mean	Std. Dev
Scale value	1	2	3	4	5	4.54	0.72
Total	0	0	3	5	16		
Percent	0%	0%	12.5%	20.8%	66.7%		

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean	Std. Dev
Scale value	1	2	3	4	5	4.38	0.77
Total	0	1	1	10	12		
Percent	0%	4.2%	4.2%	41.7%	50%		

QID 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	Mean	Std. Dev
Scale value	1	2	3	4	5	4.7	0.47
Total	0	0	0	6	14		
Percent	0%	0%	0%	30%	70%		

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

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean	Std. Dev
Scale text							
Scale value	1	2	3	4	5		
Total	0	1	1	8	14	4.46	0.78
Percent	0%	4.2%	4.2%	33.3%	58.3%		

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

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean	Std. Dev
Scale text							
Scale value	1	2	3	4	5		
Total	0	0	1	8	15	4.58	0.58
Percent	0%	0%	4.2%	33.3%	62.5%		

CHEM-643, Intermediary Metabolism, Fall 2009
Final Instructor Evaluation - Narrative Responses
HAROLD B. WHITE – Instructor

QID 3435 - Comment on the instructor.

Responses (18 of 25)

- I like Dr. White's teaching style because it encourages truly understanding the material. On the other hand, it is sometimes daunting to go to him for help because he always inundates you with questions (often these are questions that are closely related to the one you asked, which makes matters worse).
- Dr. White is one of the best professors that I have had at UD. He is extremely knowledgeable, and always offers helpful insight on any topic.
- Dr. White is knowledgeable about the subject matter and seemingly knowledgeable about his audience. His expectations for his students are not unreasonable, but is sometimes surprised by the priorities of his students.
- I like Dr. White's unique approach to how students learn material. It requires a lot more creative thought. I don't think he should be afraid to lecture if necessary however. I don't think that detracts from students understanding of the material as much as might be thought.
- Tries to use teaching methods other than lectures, which is a major change that students have trouble coping with. The teaching methods force much more independent learning, which is of benefit to students, but also very frustrating.
- Dr. White is a great professor. I have taken several courses with him and all have been extremely interesting and provided a ton of information. He knows so much on the subject material which is a great whenever you go to talk to him. I have really enjoyed taking classes with him. His excitement concerning the subject materials is quite contagious and really sparked my interests in biochemistry.
- Nice guy, very helpful when needed, although very tough and demanding with regards to the subject material.
- By far was the most interesting instructors I have ever taken, in comparing his course with other graduate courses, his was the only one that work toward showing the effects of chemistry of metabolism as a whole and on the human level, something that was easy to relate to, and you were intrigued to seek a deeper understanding.
- Dr. White does a very good job of encouraging participation in the class. Learning by doing and trying to find the patterns in metabolism were helpful means of learning the material.
- Dr. White wants his students to understand the material and he is really inspiring. His lectures are wonderful and you can not get enough of them as a student. He is the first professor i have ever met that is really passionate about the subject matter.

- Expects a lot, but beings it is Chem643, a lot is to be expected at this point in ones College career. His style is unique and in some ways very affective, but takes the whole classes participation to produce results. He is helpful when he wants to be, he definitely know what he's talking about. He's a very wise and kind man, only negative thing I could say about him is he doesn't hide who his "favorites" are. Be ready to work! Don't put off big assignments until a week or two before! The more you prepare in advance, the greater the results in the end.
- Although I was initially skeptical of the PBL style which the professor employs, I found that the way which Prof. White writes the problems presents the biochemistry issues in an applicable and interesting context. In every class period, he would stop by to discuss the progress of our group, and to make sure that we were on track. He never gave away answers, but often his input was very useful in pointing us in the right direction to find the answer ourselves. Because he acted more as a mediator than an authority, he created an incentive for us to learn the material instead of just absorbing what was put in front of us on the chalkboard. Professor White was very knowledgeable, open to criticism and dynamic adjustment of his teaching style, and used his experience in previous courses to identify the most efficient ways for us to learn a large volume of material in a short class period. I would highly recommend this professor to others.
- He was always willing to take time to help you understand something, and made sure it was clear.
- Dr. White has shown that he has thorough understanding of the course material. He presents it in an interesting way and inspires us to know more about the topics. Dr. White is one of the most well loved profs in the chem department. He cares soooo much about his students and really wants us all to learn as much as possible.
- Dr. White has extensive knowledge in biochemistry. If I were to learn the subject matter, he is the one to teach it. Dr. White encouraged outside research which would help us gain knowledge in other areas of biochemistry which were needed to be known to understand the specific problems. He created case studies in a very creative manner which would provoke and encourage students to fully understand the material in order to get the "big picture."
- Dr. White is a proponent of problem-based learning and structures his classes in that way. He is extremely knowledgeable and passionate about biochemistry.
- The instructor was very helpful if help was sought. He would not give you the exact correct answer but he would discuss the problem with you which would lead you in the right direction.

QID 3609 - Identify or describe some way(s) that Professor White could improve his teaching (and your learning).

Responses (18 of 25)

- I feel that some of the case studies were very rushed and it would help if there was more closure and identify what I should know about the case study.
- I think the case studies and problem sets can be exceedingly difficult at times. We are talking about papers written by doctors and professors, and it would be impossible for us, as undergrads, to be able to extract as much information and understanding from it as Dr. White. Also, I feel that many of the problem set questions could be worded better in that they could lead us in the right direction. A lot of times the questions are too vague or have so much data/detail that it is difficult to know where to even begin.
- Dr. White might consider updating his case studies with the use of laptops during class in mind.
- He could maybe have one or two more quizzes to ensure that people are knowledgeable of the subject matter throughout the course. I think it would keep people more honest in their preparedness and make sure that people aren't just cramming their learning of the material.
- Dr White does a great job at asking questions which promote higher thinking. Sometimes I just wish when a question is asked he would just respond with an answer!! I also think that at the end of the case studies it would be nice to know what exactly we were supposed to have learned from them or at least a general idea of what we were supposed to get from them.
- Lecture more
- Many of the ideas of case studies in class especially, group work was hindered due to the lack of prior out of class research. Even a small amount of assigned reading before group work, would

have eased the understanding. Also a "wrap-up" for the case studies were a more often a finishing of the material that was presented, but I felt in addition to that could have been a brief summary of the main points that were to be taken away from the problem set.

- Provide an easier way for students to learn independently of their groups and even of the class. Providing more assignments would be useful
- More guidance during a few of the lectures may have helped, although that could be an artifact of the particular class this semester.
- I like the problem based learning but I liked Dr. White's lectures better. I think that he should incorporate more of his lectures into the class, but that is just because I enjoy them! They are the best lectures i have ever had throughout my entire life.
- Although PBL was a good learning style, it often left us floating in space without any idea of how to progress. Lectures should be interspersed with PBL case studies throughout the semester, to make sure that students have a deeper understanding of both what is expected of them, and how these issues relate to the field of biochemistry as a whole. In short, lectures are a useful adjunct to his teaching style. Students greatly benefit from absorbing the information from an expert in the field, rather than just a textbook. It is clear that he has a deep understanding of the material, and this should be a resource employed more often in teaching this course.
- Lectures were good. Group work was difficult because if the group didn't do the work then you wouldn't learn. I'm not sure how to fix that but it definitely was an issue.
- There are times during the course when I feel that PBL does not facilitate learning of the material, especially when the group fails to function well together. I wish that Dr. White played more of an active role in that aspect of the course.
- I did not find the case studies as stimulating as the 342 papers. Especially some of the "hooks" were too broad to generate good learning issues. You should use the group contact pages from 342 to help groups get to know each other the first group day.
- Dr. White is a very effective teacher and his style of teaching is unique. One improvement I would suggest would be better preparing for the midterm and final examinations. As a student studying for these exams, I did not clearly know what he did or did not want us to know for the exams. Obviously we covered hundreds of pages of textbook material and we cannot learn all of it, so it would have been nice for him to outline some of the key topics he wanted us to study to better perform on his exam.
- In some ways, problem-based learning was ineffective in teaching some of the material covered in class. Despite extensive outside research there were times that my group got the point of the subjects completely wrong, which affected our grades. If we were taught in a lecture style it would have eliminated some of the confusion I felt throughout the course. For me personally, I understand more when there are visuals to go along with the topic. Sometimes seeing how to get from A to B can explain a lot. I understand the philosophy behind not posting exam answers, but in discussions with some of my classmates everyone agrees that having an answer key would be helpful. Maybe post pieces of the answer keys. This would still require students to solve the problem on their own, but would offer a guide when completely stuck.
- To improve my learning in this course, it would be helpful to have an outline or as for the last in class case study a concept map to understand the main points of the case study. I found that often we would finish a case study and I would still not know what connections we were expected to make or what the main points covered were.

QID 3608 - Identify or describe some thing(s) that Professor White does particularly well.

Responses (22 of 25)

- When working in your groups Dr White helps a lot with moving the talk forward and getting people to think about things that they normally wouldn't think. This doesn't give them the answer but yet gets you to think harder.
- Dr. White has a great understanding of HOW to ask questions about a particular problem, and this is the #1 skill he wants to impart upon us. I can only hope to be as good as him at it someday. Thank you, Dr. White. I will always remember your class.

- He encourages involvement from everyone in the class and does everything he can to make sure that we understand the subject matter rather than just memorizing things.
- Dr. White is very good at gauging how well people (don't) understand a topic. He is passionate about teaching and cares as much about teaching metabolism as much as teaching a student how to learn metabolism.
- He was very good at conveying enough information so that students could make the next step, but not enough to prevent them from looking up answers themselves
- Knows the material very well. When students feel that they know the concepts, Dr. White can usually find a probing question to ask the students to show what they still don't know.
- He does a really great job at making the subject material interesting. The way the class is structured is way different from any of the other biochemistry classes. I think it is an effective way to teach the subject material.
- Dr. White is extremely good at presenting material necessary for the class. He relates material and subjects in metabolism through case studies in a manner that is very good.
- His ability to make the students see the whole picture from understanding the root of the words, like squaline, or folate, to the big picture of defects was great. The course was challenging, particularly for me, but I certainly feel like I've developed a real expertise on the subject matter. He is a great teacher.
- Explaining why a particular metabolic pathway is pertinent to everyday life, its practical application and the motivation for understanding the pathway
- assignments make you work a lot out of class. It forces you to utilize all available resources- journals, etc. it strongly helps with the material.
- He encourages learning the material outside of class.
- His teaching by doing style is engaging, and challenging. Lectures are clear and keep students attentive.
- I like how he makes sure that we are understanding the material. For example on the homework sets that we had he wrote on them what we were supposed to get out of doing the hw and what the point was. So as a student you knew what you were supposed to get out of when doing the homework and it was sort of a guide for me. Also even though the problem sets were tedious i think that they were great because a lot of grad classes don't give homework or assignments and what it does is it keeps you from falling behind in class and it also helps keep you interested in the material. The questions that Dr. White asks are not typical questions they stimulate your thinking and are really interesting.
- He gets the whole class involved and thinking. He is very knowledgeable and willing to help, but only when he feels its necessary. He wants everyone to strive to reach their fullest potential on their own, but is willing to assist you a little on the way.
- He helps you to get to the answer yourself. The way her phrases questions in homework is such that you really must understand the answer in order to get to it.
- Dr. White can connect to his students on a personal level and is always available to discuss the course and any problems that are encountered.
- Writes homework sets. Inspires students to think about chemical structures, etc.
- He presents the course material in an interesting way that makes the student want to learn about the topic and research it outside of class.
- Dr. White knows a great deal about the subjects and has done extensive research about each of the topics discussed so he can easily explain them to the students in the classroom.
- Promotes group interaction and learning.
- Professor White is very good at engaging conversation among students during group work.

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QID 4329 - The course was well organized.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean	Std. Dev
Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree		
Scale value	1	2	3	4	5		
Total	0	1	1	8	14	4.46	0.78
Percent	0%	4.2%	4.2%	33.3%	58.3%		

QID 4330 - The course textbook was very useful.

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean	Std. Dev
Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree		
Scale value	1	2	3	4	5		
Total	0	1	2	6	14	4.43	0.84
Percent	0%	4.3%	8.7%	26.1%	60.9%		

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

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean	Std. Dev
Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree		
Scale value	1	2	3	4	5		
Total	0	0	1	7	15	4.61	0.58
Percent	0%	0%	4.3%	30.4%	65.2%		

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

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean	Std. Dev
Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree		
Scale value	1	2	3	4	5		
Total	0	1	0	6	17	4.63	0.71
Percent	0%	4.2%	0%	25%	70.8%		

QID 4650 - I am a

	Undergraduate	Graduate Student
Scale text	A	B
Scale value	A	B
Total	20	4
Percent	83.3%	16.7%

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

	<3 hours/week	3-6 hours/week	6-9 hours/week	9-12 hours/week	>12 hours/week
Scale text	A	B	C	D	E
Scale value	A	B	C	D	E
Total	3	8	7	4	2
Percent	12.5%	33.3%	29.2%	16.7%	8.3%

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

	Strongly Agree	Agree	No opinion/Undecided	Disagree	Strongly disagree
Scale text	Strongly Agree	Agree	No opinion/Undecided	Disagree	Strongly disagree
Scale value	A	B	C	D	E
Total	14	9	0	1	0
Percent	58.3%	37.5%	0%	4.2%	0%

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

Scale text	Strongly agree	Agree	No opinion/Undecided	Disagree	Strongly disagree
Scale value	A	B	C	D	E
Total	9	7	4	4	0
Percent	37.5%	29.2%	16.7%	16.7%	0%

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

Scale text	Strongly agree	Agree	Opinion/Undecided	Disagree	Strongly disagree
Scale value	A	B	C	D	E
Total	11	4	5	4	0
Percent	45.8%	16.7%	20.8%	16.7%	0%

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

Scale text	Strongly agree	Agree	No opinion/Undecided	Disagree	Strongly disagree
Scale value	A	B	C	D	E
Total	11	11	1	1	0
Percent	45.8%	45.8%	4.2%	4.2%	0%

QID 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 agree	Agree	No opinion/Undecided	Disagree	Strongly disagree
Scale value	A	B	C	D	E
Total	4	3	5	11	1
Percent	16.7%	12.5%	20.8%	45.8%	4.2%

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

Scale text	Never	Rarely	Sometimes	Frequently	Always	Mean	Std. Dev
Scale value	1	2	3	4	5		
Total	0	0	0	1	21	4.95	0.21
Percent	0%	0%	0%	4.5%	95.5%		

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

Scale text	Strongly agree	Agree	No opinion/Undecided	Disagree	Strongly disagree
Scale value	A	B	C	D	E
Total	2	10	1	10	1
Percent	8.3%	41.7%	4.2%	41.7%	4.2%

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

Scale text	Strongly agree	Agree	No opinion/Undecided	Disagree	Strongly Disagree
Scale value	A	B	C	D	E
Total	13	8	0	2	0
Percent	56.5%	34.8%	0%	8.7%	0%

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

Scale text	Strongly Agree	Agree	No opinion/Undecided	Disagree	Strongly disagree
Scale value	A	B	C	D	E
Total	2	5	7	9	0
Percent	8.7%	21.7%	30.4%	39.1%	0%

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

Scale text	Strongly agree	Agree	No opinion/Undecided	Disagree	Strongly disagree
Scale value	A	B	C	D	E
Total	3	9	4	5	1
Percent	13.6%	40.9%	18.2%	22.7%	4.5%

QID 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	Mean	Std. Dev
Scale value	1	2	3	4	5		
Total	0	4	4	14	2	3.58	0.88
Percent	0%	16.7%	16.7%	58.3%	8.3%		

QID 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	Mean	Std. Dev
Scale value	1	2	3	4	5		
Total	0	2	2	12	7	4.04	0.88
Percent	0%	8.7%	8.7%	52.2%	30.4%		

QID 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	Mean	Std. Dev
Scale value	1	2	3	4	5		
Total	6	14	3	1	0	1.96	0.75
Percent	25%	58.3%	12.5%	4.2%	0%		

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean	Std. Dev
Scale value	1	2	3	4	5		
Total	11	11	0	1	0	1.61	0.72
Percent	47.8%	47.8%	0%	4.3%	0%		

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

Scale text	Hardly Ever	Occasionally	Sometimes	Frequently	Almost Always	Mean	Std. Dev
Scale value	1	2	3	4	5		
Total	2	2	4	6	9	3.78	1.31
Percent	8.7%	8.7%	17.4%	26.1%	39.1%		

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

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean	Std. Dev
Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree		
Scale value	1	2	3	4	5		
Total	4	9	4	5	0	2.45	1.06
Percent	18.2%	40.9%	18.2%	22.7%	0%		

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

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean	Std. Dev
Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree		
Scale value	1	2	3	4	5		
Total	3	7	5	4	4	2.96	1.33
Percent	13%	30.4%	21.7%	17.4%	17.4%		

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

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean	Std. Dev
Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree		
Scale value	1	2	3	4	5		
Total	0	2	1	8	12	4.30	0.93
Percent	0%	8.7%	4.3%	34.8%	52.2%		

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

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean	Std. Dev
Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree		
Scale value	1	2	3	4	5		
Total	0	2	2	13	7	4.04	0.86
Percent	0%	8.3%	8.3%	54.2%	29.2%		

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

	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Mean	Std. Dev
Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree		
Scale value	1	2	3	4	5		
Total	0	0	2	11	11	4.38	0.65
Percent	0%	0%	8.3%	45.8%	45.8%		

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Final Course Evaluation - Narrative Responses
HAROLD B. WHITE – Instructor

QID 3436 - Comment on the course.

Responses (14 of 25)

- difficult but fulfilling
- I enjoyed the lecture portion of the course very much.
- I had never seen Dr. White lecture before, and he is very good at it. The PBL portion went pretty well.
- Metabolism is a classic topic in biochemistry. Taking a course that was taught like this was an interesting take on it.
- The course was just the right balance of graded material and simply learning material.
- This course was one of the most interesting ones I have taken in college. It has really allowed for me to fully appreciate the subject of biochemistry. For the first time in the upper level biochem classes I have actually relied on fully understanding besides straight memorization. The case

study at the end of the course was really one of my more favorite projects I've done in college. I wish I would have dedicated more time in the beginning of the semester to this class.

- Overall course was extremely hard, but very good in the sense that it really makes you know your metabolism.
- The course is an excellent overview of basic metabolic chemistry. I can't speak to the level of complexity other than to say it seems appropriate for a final course in the undergraduate biochemistry curriculum.
- The course was well laid out. I loved the case studies they were really interesting and stimulated my thinking. I learned more in this course than any other, and part of it is because Dr. White laid out the material in a great manner.
- This was an excellent capstone-type course for the biochemistry major. I feel that it has really helped me to tie together the disparate pieces of knowledge I picked up in organic and the earlier biochem courses. I appreciated this integration of material because I feel that I learned a lot about the interconnection between biochemical pathways, emphasizing the chemical basis rather than the molecular biology of the topics. The course is very helpful. There were a lot of time at seminar that I was able to use the material I learned in class to help understand what the presentation was about.
- This course is very interesting.
- The course is very rigorous and demanding. However it is a graduate level course and I did not expect anything less. By the end of the course you learn a lot of material that is useful to know and is interesting to know. Students also gain the skill of problem based learning and scientific research.
- The course was the appropriate amount of work considering it was on a graduate level, however I felt that some of the material was not well presented.
- The course was interesting but I did not like the fact that a majority of the class material was based on group work. I was grouped with several undergraduates, one who dropped the class after the first exam and the other two who sometimes just didn't show up and I was left by myself to complete a group assignment. I also feel that I contributed most of the effort to complete the assignments outside of the classroom. It would be better if graduate students were grouped together or if there was a penalty for poor group work.

QID 4649 - In a sentence or two, describe or characterize CHEM-643 to someone who might consider taking the course.

Responses (22 of 25)

- You learn a lot about different pathways in the body. There is a lot of group work and you will learn about a metabolite within the body with the case study.
- Do the background research for case studies. Read primary literature. Read the book. Take good notes.
- 643 teaches you all of the major/most commonly studied pathways in metabolism, and gives you the tools to learn about the lesser-known ones on your own.
- 643 is a required course for Biochemistry majors.
- The course is a lot of hard work, but if you put the time you really do see the big picture of things, and appreciate the complexity and precision of everything
- Difficult, but the way it is taught will force you to understand metabolic systems as a whole rather than memorizing small portions of it.
- This class uses a variety of case studies to introduce various metabolic pathways which are essential to biochemistry.
- Extremely demanding as well as time consuming. It requires a that one devote a lot of time and effort in order to succeed.
- The course is very thought provoking and encompasses a wide range of chemistry and metabolism, everything is very interesting and really ties together everything nicely.
- The course focuses on classical metabolic pathways in great depth and gives you a very strong understanding of how the cell works as a process rather than as isolated linear paths. It also

provides you with the tools to effectively deduce why a metabolism responds a certain way to certain stimulus.

- its challenging but you force yourself to learn a lot
- Be prepared to spend a lot of time outside of class on learning what you need for this course. It is not to be taken lightly.
- Challenging overview of metabolism. Great learning and information to begin looking at some more in-depth molecular biology of how things work.
- It is a very interesting course, not the typical chemistry course your used to taking. You have learned a lot in the previous semesters about biological regulation and the individual pathways of metabolism, but not how they play together. This course will help you understand how they all fit together as part of a complex machine, and it will help to provide you with tools to diagnose problems in this machine where they occur.
- It challenges you to think in different ways and develop a complete understanding of what you are studying.
- This course is about topics surrounding and relating to intermediary metabolism. Chem643 makes you think about metabolism both globally in terms of physiological effects and chemical in terms of structures, enzymes and cofactors. Much of the learning takes place outside of class, and in-class discussions can be very enjoyable and stimulating.
- This course is rigorous and demands a lot of outside class time. However, it is very satisfactory when you learnt the material. I researched my case study and found information that I never knew, and now I can explain to a stranger the biochemical processes that occur when we bleed from a wound cut. It is interesting but challenging, however the workload and stress is worth it at the end.
- CHEM 643 is a graduate level course that focuses on metabolism from a problem-based learning approach. Students will work on group projects and homework assignments, but the majority of the grades come from the midterm and final exams and the case study project due at the end of the semester.
- Very interesting course covering a lot of material.
- CHEM 643 is def. not an easy course but you do learn a lot. The homework and classwork is challenging but once you uncover where to begin, you come across a lot more connections to other topics in the course making the course less about memorization and more about understanding. The quizzes and exams are difficult and do not measure how much you have studied but how well you understand the topics being discussed and how you can apply them to situations which were not presented in class.

Question ID: 3610 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.

Responses (20 of 25)

- The course description is accurate and the class covers everything stated at some point in the class.
- I think that you should do some sort of a "update" assignment for the case study. I saved it 'til the last minute and its quality probably suffered (my own fault, of course).
- I thought that the syllabus was a good indication of what was going to happen in the course and doesn't need to be changed.
- The syllabus is well constructed and outlines well what is expected of the student.
- The syllabus was clear and easy to navigate. It explained most things concisely and helped guide me through the course
- The syllabus gives an accurate description of the course.
- The syllabus provided a very accurate description of the course. It provided a useful description of what was expected from students throughout the course. I don't think there was anything which should be added, its one of the most descriptive syllabus that I have received in college.

- I think the syllabus did its job very well. It explained the syllabus in full detail as well as underlined material in which we would be studying and focusing on throughout the semester.
- no, it was fine.
- Yes, the syllabus adequately described the course.
- I think that the syllabus accurately reflected everything we did and learned in the course, I know this because I frequently referred to it throughout the course. (about once a week) There is nothing that seems to be missing.
- The syllabus stand through the whole course. It described exactly what is expected of you and when it is due, this never changes.
- I really would have liked more emphasis in the syllabus on how much time that the case study would take. Although this was mentioned in class, professors in other classes often push students to start assignments early, when there is not necessarily a need to do so. This was a large assignment that I wish I had started earlier so that I could have done a more thorough job. Maybe checkpoints would be useful. For instance, 3 weeks before the due date, the syllabus might suggest "Finish finding secondary sources. Begin reviewing primary sources." Then later, there might be "Produce an outline for each of your teaching pages." Just an idea.
- I couldn't find any information on how much quiz's are worth. It would be helpful to put that on the syllabus or make it more clear. Everything else was very clear.
- Yes, the syllabus described the course very adequately.
- Your syllabi are always too long. Put some of the PBL theory in links rather than in the main syllabus. The schedule is generally a more useful resource than the syllabus. But yes, the syllabus does describe the course well.
- The syllabus was sufficient for its purpose. It provided information when needed to be referred back to, for example with the case study. I read the syllabus when writing the case study and it gave me a good direction to write my paper.
- The syllabus was accurate in describing the course.
- I thought the syllabus accurately depicted the course and the involvement and expectations of the students.
- The syllabus adequately describes the course. Quizzes are not mentioned on the syllabus and I think maybe it should be mentioned that half of your quiz grade is group based.

QID 3611 - Open Mic. Reflect on the course and identify those aspects that you like or think could be improved. Please suggest ways for improvement.

Responses (17 of 25)

- I just feel that some of the case studies feel a bit rushed with the way the papers are being handed out.
- I like the part PBL, part lecture, but I think the PBL should have been dispersed throughout the semester, so we didn't have homework due every week for the first half, and all PBL all the time for the last half.
- Intermediate metabolism is no jest where what you learn is the best. Biochemistry is fun, But now I've got to run And study for the final test.
- Emphasize that everyone should be expected to contribute equally especially in groups. Feel free to ask more thought provoking questions during lectures as well; some of the discussion questions Dr. White asked seemed a little too easy which is why I thought no one would answer them. Maybe if the questions required a little more thought would people be more willing to participate.
- Could understand the power and use of PBLs, but might have benefited more by working alone and consulting others only if needed (as if they were extended homework problems). This would have promoted independent research, rather than divide and conquer methods used in allocating learning issues. Other than that, the course was great.
- Its difficult to say how this class could be improved because I feel like it does such a great job at relaying all of the important aspects of intermediary metabolism. It is really difficult to decide which ways this class could be improved because I feel like it already does an excellent job at

teaching students the important information. It is quite apparent that Dr. White spends a lot of time and effort in organizing this class which makes it very enjoyable to participate in.

- Definitely the toughest course I have taken thus far at the university, and I do not expect to encounter one as difficult in the rest of my time here. Perfect professor for the course, whom made it different from any other. I think that this course is extremely valuable to any student. Instead of taking traditional courses this course starts to develop different ways students should think about material in order to develop questions and issues that are of importance for gaining knowledge. Although, it is demanding and overwhelming at times its worth it. However some case studies just did not spark the interest of students and should maybe be lectured about for a little bit of the class period in which they are given.
- I really think that the first exam was not an accurate representation of the material and because of that I think my grade was really affected, perhaps if there were 3 exams the weight of one might not be such a heavy burden to carry.
- Working in groups was hard as few people in the group were very engaged in the learning process. It seemed that we needed more preparation before we met. a lot of time was wasted trying to figure out individually what was going on. A better approach would have been to give us the sheet for analysis a day before, and then discuss it the next day. Coming up with questions in a group setting did not seem to add much value to the process. It was especially hard for me, as I am used to learning many things from the textbook or from research outside of class on my own. Class usually serves me only as a guideline towards what I need to start investigating not so much as a source of explanation since time in classes is limited and the problems solved are geared to help the general audience rather than individual questions. I feel that I learned more from the very first assignment than from the case study about amino acids or life without oxygen. Time wise, the case studies took one week while the assignment took 2-3 days of work. I like working in groups, bounce ideas back and forth, discuss problems and find solutions in a meeting setting but these case studies did not seem to serve that purpose effectively. I found myself in a much more dynamic group setting while working in groups through certain individual homeworks.
- I don't like the PBL aspect for this course. My group didn't take the case studies seriously enough, and I feel that we are not adequately prepared for the final as a result. PBL works well for some courses, but not for Chem-643
- Great class with an engaging approach to teaching. Potentially, more guidance as to where to begin studying a topic could help.
- I think that the course was awesome. There is honestly nothing I would change except I would add more case studies if possible! they were the best.
- It may be helpful to use the first group project as a test run for who is actually going to do the work. It would be nice to rotate the groups, and if only certain people are going to do the work, it may be nice to let them work together in class. It's ok to get together outside of class, but it's frustrating to spend an hour in class with people who don't even know the basic pathway you are studying, and then be motivated to spend another hour with a fellow student accomplishing something that should have been done in class. I understand that it hasn't always been like this and this may be an unfair way to break up the groups, but it would at least be helpful to switch groups every case study so at least group work has the chance to improve. It was very clear from the beginning to the end that if someone didn't come back with work on the first day, they would never come back with work. The quiz's were a good way to conclude the case study and make sure you understood the entire thing, but the format of the quiz's was difficult. Multiple choice makes you pick to best answer, and even if you understand the topic, you may interpret the question the wrong way, and a couple of off interpretations, or misunderstandings can really affect your quiz grade, but I know that is also just the nature of multiple choice, I'm just not sure if multiple choice alone is an accurate way to show what you have learned about the case study.
- Dr. White is a very engaging lecturer. There are times in the course when I would prefer his lecturing over PBL.
- I liked the course and thought it was very useful. I have learned things in this course that I will never forget and I am satisfied with the content and work I have put in and the knowledge I have gained. The exams were a bit tricky and I did not understand few of the questions on the exams

or what the questions were asking for, so I did poorly on my midterm. If the question types were more clear, I may have performed better.

- Visuals, Partial answer keys to be used as a guide instead of a memorization tool.
- One main aspect which should be improved is the concept of group work. My group failed to show up to class and often left me by myself for the first 15 minutes of class so I feel like I was behind in the case studies. There should be a group evaluation done by the students which counts as a quiz which rates the other members group work. I feel that this would provide more incentive for group members to be present and actively participate in the case studies.

Question ID: 11490 In groups you have worked through four extended case studies this semester.

- i. Life without oxygen
- ii. Are you what you eat?
- iii. Plants vs Animals in the dining hall
- iv. Kellogg's Product 19

Please rank the four in terms of their overall value to your learning. And, state the virtues of the case study that you ranked number 1.

Responses (23 of 25)

- I found that Kellogg's Product 19 was the most important for other reasons other than learning metabolism. It brought up the fact that without proper metabolic intermediates there is a chance at problems having a child. With moving on to the next stage in life and being ready to start a family this made me realize there are other things to think about for the well being of a child. The other case study's rank as follows; Plants vs Animals in the dining hall, Life without oxygen, Are you what you eat.
- 3,1,2,4. The plants vs. animals one was my favorite because the topic was quite relevant and information was something that many people have common misconceptions about.
- 1. Plants v. Animals 2. Kellogg's 3. Are you what you eat 4. Life without O₂ I found the Kellogg's case study topic most interesting, but I learned the most from the Plants v. animals case study.
- 2,4,3,1. The "are you what you eat?" case study was interesting and something that had occurred to me before.
- 1- Plants vs. Animals 2- Life without O₂ 3- Are you what you eat 4- Product 19
- 1: Are you what you eat? Provided interesting and compelling data to analyze. Much of the research for this problem set was not in the textbook. Easy to relate to. 2: Plants v Animals 3: Product 19 4: Life without Oxygen
- All of the case studies provided a variety of information. It is hard to say which one provided the most useful information. I would say the case study which provided the most variety of information and was the most useful was Are you what you eat?, followed by life without oxygen, plants versus animals in the dining hall and then Kellogg's Product 19. Though I have ranked them they were are very similar in the educational value. T
- he following are ranked in order from most valuable to least: Plants vs Animals, Kellogg's Product 19, are you what you eat, and life without oxygen. Plants vs animals Was my favorite, it was the one that grabbed my attention the most. Maura Pease's issue with being a vegetarian instead of a regular omnivore posed some great issues that were just good for learning in the class but actually for personal knowledge in the future.
- 4, life without O₂ 3, are you what you eat? 2, plants vs animals 1, Kelloggs product 19 because it traversed FDA policies human defects and how people tried to correct those problems via metabolism.
- iv,iii,ii,i. I did not know anything about case number four except for the fact that it was recommended to prevent abnormal embryonic growth and development.
- plants v. animals -1 are you what you eat-2 life w/o o₂-3 product 19-4
- Life w/o Oxygen: 1. encouraged the pursuit of basic knowledge in intermediary metabolism Are you what you eat? Plants vs Animals in the dining hall Product 19
- In order: III Plants v Animals II Are you what you eat? I Life without oxygen IV Kellogg's Product 19. In general, the my interest and my rating were based largely in personal interest in non-

medicinal topics of metabolism. All were supportive of learning the pathways involved. The most interesting of these to me was Plants v. Animals, as it introduced selective pressures and competition into the metabolic pathway development and reasoning.

- 1) Kellogg's Product 19 I rate this my favorite because I loved the topic. For me it was really interesting so I loved doing research and making connections from the research I did to the actual case study. 2) plants vs animals 3) are you what you eat 4) life without oxygen Plants vs animals in the dining hall Life without Oxygen Are what you eat Kellogg's Product 19 Plants vs animals was very straightforward. Going through the biosynthesis and synthesis of all the amino acids was very useful for the class.
- 1. Kellogg's Folate metabolism was never covered in another course for me. This is a central molecule for many biochemical pathways, so it was useful to learn about its far ranging effects on both biochemistry and physiology. 2. Plants vs Animals 3. Are you what you eat? 4. Life without oxygen
- 1. ii 2. iii 3. iv 4. i Are you what you eat was a particularly challenging case study, but it helped to bring a lot of material together, and fill in gaps of certain pathways that you may have missed in a previous course. On the downside, it was probably much more challenging than intended if no one in the group did the work.
- Plants vs. Animals> Kellogg's Product 19> Are you what you eat?> Life without oxygen. 1) Kellogg's Product 19 I enjoyed this case study the most because it was more specific and allowed me to delve into medically related learning issues. The 1st page generated more LIs than any other 1st pg of a case study. 2) Are you what you eat? 3) Life without oxygen 4) Plants vs Animals in the dining hall 4.
- Life without oxygen 3. Kellogg's 2. plants vs animals 1. you are what you eat I liked the you are what you eat because the story was well planned and it provoked me to do a lot of research outside of class. I found the differences between vegetarians and meat eaters and what advantages meat eaters have over vegetarians. I liked figuring out what amino acids were essential and how vegetarians lack certain things that would place them at a disadvantage than meat eaters.
- 1. Plants vs. Animals 2. Kellogg's Product 19 3. Are you what you eat? 4. Life Without Oxygen Plants vs. animals in the dining hall was the most easily understood case study discussed in class. Although the material was appropriately difficult, it was easy to determine what information was important and to analyze the data.
- 1. Plants and Animals - found the topic to be very interesting, easy to relate to and understand my everyday diet 2. Kellogg's Product 19 3. Are you what you eat 4. Life without oxygen 1. Plants and Animals 2. Kellogg's Product 19 3. You are what you eat 4. Life without oxygen I liked how the Plants and Animals in the Dining Hall was structured. The idea that it was presented as synthesis and then breakdown was very helpful in fully understanding the topic. The data presented from the literature was very helpful in classifying essential and non-essential amino acids and the relationship between them.