

**Detailed Responses for CHEM-643, Intermediary Metabolism, for Fall 2013
Instructor Harold Bancroft White III**

Detailed Responses Total =
Responded /
Enrolled

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total:	29 / 29
Scale value	1	2	3	4	5	Mean:	4.97
Total	0	0	0	1	28	Std. Dev:	0.19
Percent	0%	0%	0%	3.40%	96.60%	Median:	5
						Mode:	5

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total:	29 / 29
Scale value	1	2	3	4	5	Mean:	4.76
Total	0	0	1	5	23	Std. Dev:	0.51
Percent	0%	0%	3.40%	17.20%	79.30%	Median:	5
						Mode:	5

QID 3427 - The instructor encouraged class participation.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total:	29 / 29
Scale value	1	2	3	4	5	Mean:	4.97
Total	0	0	0	1	28	Std. Dev:	0.19
Percent	0%	0%	0%	3.40%	96.60%	Median:	5
						Mode:	5

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	Total:	29 / 29
Scale value	1	2	3	4	5	Mean:	4.76
Total	0	0	0	7	22	Std. Dev:	0.44
Percent	0%	0%	0%	24.10%	75.90%	Median:	5
						Mode:	5

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total:	29 / 29
Scale value	1	2	3	4	5	Mean:	4.62
Total	0	0	1	9	19	Std. Dev:	0.56
Percent	0%	0%	3.40%	31%	65.50%	Median:	5
						Mode:	5

Final Course and Instructor Evaluations for CHEM-643 Fall 2013

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	Total:	26 / 29
Scale value	1	2	3	4	5	Mean:	4.77
Total	0	0	0	6	20	Std. Dev:	0.43
Percent	0%	0%	0%	23.10%	76.90%	Median:	5
						Mode:	5

QID 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:	28 / 29
Scale value	1	2	3	4	5	Mean:	4.61
Total	0	0	0	11	17	Std. Dev:	0.5
Percent	0%	0%	0%	39.30%	60.70%	Median:	5
						Mode:	5

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total:	29 / 29
Scale value	1	2	3	4	5	Mean:	4.79
Total	0	0	0	6	23	Std. Dev:	0.41
Percent	0%	0%	0%	20.70%	79.30%	Median:	5
						Mode:	5

QID 4329 - The course was well organized.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total:	29 / 29
Scale value	1	2	3	4	5	Mean:	4.52
Total	0	0	1	12	16	Std. Dev:	0.58
Percent	0%	0%	3.40%	41.40%	55.20%	Median:	5
						Mode:	5

QID 4330 - The course textbook was very useful.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total:	29 / 29
Scale value	1	2	3	4	5	Mean:	3.86
Total	0	1	12	6	10	Std. Dev:	0.95
Percent	0%	3.40%	41.40%	20.70%	34.50%	Median:	4
						Mode:	3

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total:	29 / 29
Scale value	1	2	3	4	5	Mean:	4.83
Total	0	0	0	5	24	Std. Dev:	0.38
Percent	0%	0%	0%	17.20%	82.80%	Median:	5
						Mode:	5

Final Course and Instructor Evaluations for CHEM-643 Fall 2013

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total:	29 / 29
Scale value	1	2	3	4	5	Mean:	4.86
Total	0	0	0	4	25	Std. Dev:	0.35
Percent	0%	0%	0%	13.80%	86.20%	Median:	5
						Mode:	5

QID 4650 - I am a

Scale text	Undergraduate	Graduate Student	Total
Scale value	A	B	
Total	28	1	29 / 29
Percent	96.60%	3.40%	

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

Scale text	<3 hours/week	3-6 hours/week	6-9 hours/week	9-12 hours/week	>12 hours/week	Total
Scale value	A	B	C	D	E	
Total	0	16	10	3	0	29 / 29
Percent	0%	55.20%	34.50%	10.30%	0%	

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

Scale text	Strongly Agree	Agree	No opinion/Undecided	Disagree	Strongly disagree	Total
Scale value	A	B	C	D	E	
Total	18	9	2	0	0	29 / 29
Percent	62.10%	31%	6.90%	0%	0%	

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

Scale text	Strongly agree	Agree	No Opinion/Undecided	Disagree	Strongly disagree	Total
Scale value	A	B	C	D	E	
Total	7	7	9	6	0	29 / 29
Percent	24.10%	24.10%	31%	20.70%	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	Total
Scale value	A	B	C	D	E	
Total	8	17	3	0	1	29 / 29
Percent	27.60%	58.60%	10.30%	0%	3.40%	

Final Course and Instructor Evaluations for CHEM-643 Fall 2013

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

Scale text	Never	Rarely	Sometimes	Frequently	Always	Total:	29 / 29
Scale value	1	2	3	4	5	Mean:	4.97
Total	0	0	0	1	28	Std. Dev:	0.19
Percent	0%	0%	0%	3.40%	96.60%	Median:	5
						Mode:	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	Total
Scale value	A	B	C	D	E	
Total	5	15	4	4	1	29 / 29
Percent	17.20%	51.70%	13.80%	13.80%	3.40%	

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

Scale text	Strongly Agree	Agree	No opinion/Undecided	Disagree	Strongly disagree	Total
Scale value	A	B	C	D	E	
Total	1	7	8	13	0	29 / 29
Percent	3.40%	24.10%	27.60%	44.80%	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	Total
Scale value	A	B	C	D	E	
Total	9	15	3	2	0	29 / 29
Percent	31%	51.70%	10.30%	6.90%	0%	

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	Total:	29 / 29
Scale value	1	2	3	4	5	Mean:	3.86
Total	1	3	3	14	8	Std. Dev:	1.06
Percent	3.40%	10.30%	10.30%	48.30%	27.60%	Median:	4
						Mode:	4

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	Total:	28 / 29
Scale value	1	2	3	4	5	Mean:	4.21
Total	0	1	1	17	9	Std. Dev:	0.69
Percent	0%	3.60%	3.60%	60.70%	32.10%	Median:	4
						Mode:	4

Final Course and Instructor Evaluations for CHEM-643 Fall 2013

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

Scale text	Hardly Ever	Occasionally	Sometimes	Frequently	Almost Always	Total:	28 / 29
Scale value	1	2	3	4	5	Mean:	4.32
Total	0	0	5	9	14	Std. Dev:	0.77
Percent	0%	0%	17.90%	32.10%	50%	Median:	4.5
						Mode:	5

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total:	28 / 29
Scale value	1	2	3	4	5	Mean:	2.86
Total	4	7	9	5	3	Std. Dev:	1.21
Percent	14.30%	25%	32.10%	17.90%	10.70%	Median:	3
						Mode:	3

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total:	28 / 29
Scale value	1	2	3	4	5	Mean:	4.57
Total	0	1	0	9	18	Std. Dev:	0.69
Percent	0%	3.60%	0%	32.10%	64.30%	Median:	5
						Mode:	5

QID 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:	28 / 29
Scale value	1	2	3	4	5	Mean:	4.61
Total	0	0	1	9	18	Std. Dev:	0.57
Percent	0%	0%	3.60%	32.10%	64.30%	Median:	5
						Mode:	5

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

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total:	28 / 29
Scale value	1	2	3	4	5	Mean:	4.46
Total	0	1	0	12	15	Std. Dev:	0.69
Percent	0%	3.60%	0%	42.90%	53.60%	Median:	5
						Mode:	5

QID 13330 - I found working on case studies to be a valuable learning experience.

Scale text	Hardly Ever	Occasionally	Sometimes	Frequently	Almost Always	Total:	28 / 29
Scale value	1	2	3	4	5	Mean:	4.18
Total	0	0	4	15	9	Std. Dev:	0.67
Percent	0%	0%	14.30%	53.60%	32.10%	Median:	4
						Mode:	4

Final Course and Instructor Evaluations for CHEM-643 Fall 2013

QID 15583 - I personally learned a lot researching for my group's final project.

Scale text	Strongly agree	Agree	No opinion/Undecided	Disagree	Strongly Disagree	Total
Scale value	A	B	C	D	E	
Total	10	12	5	1	0	28 / 29
Percent	35.70%	42.90%	17.90%	3.60%	0%	

QID 13331 - Instead of case studies and group work, Dr. White should have lectured for the whole semester.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total:	28 / 29
Scale value	1	2	3	4	5	Mean:	1.96
Total	11	8	8	1	0	Std. Dev:	0.92
Percent	39.30%	28.60%	28.60%	3.60%	0%	Median:	2
						Mode:	1

QID 13332 - I would prefer that the course had a PBL format for the entire course rather than interspersed with lecture.

Scale text	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree	Total:	28 / 29
Scale value	1	2	3	4	5	Mean:	2.46
Total	3	15	5	4	1	Std. Dev:	1
Percent	10.70%	53.60%	17.90%	14.30%	3.60%	Median:	2
						Mode:	2

Essay Responses for CHEM-643, Intermediary Metabolism for Fall 2013 Instructor Harold Bancroft White, III

Question ID: 3435

Comment on the instructor.

Responses (23 of 29)

- Dr. White ranks among the best professors that I've had at UD. He wants you to understand the material, rather than memorize pathways. You are actively learning, rather than regurgitating pathways.
- Professor White's extensive knowledge of biochemistry was obvious. His presentation of broad principles was clear and made it easy to make connections. In lectures and in PBL group sessions he asked us questions to get us on the right track to discovering answers on our own. But if we simply were not getting it, he would make sure that we ultimately understood the take-home message.
- The professor was helpful in learning the subject matter through participation and engagement learning.
- one of the best instructors at UD. really challenges you to do your work and to understand the material and not to just memorize.
- Very unique class. Half lecture and half group work. Not much structure in terms of guidance from professor. A lot of work was required to stay on top of coursework. Very interesting class!
- Dr. White is a unique instructor, who obviously has learning and understanding as his number one priority. It was nice to be presented with a problem first instead being pummeled with info to memorize. He was very creative as well and made the class interesting.
- Allows students to think and guides them to form the correct answer. This makes the students learn the topic material completely.
- Hal White is a very nice and knowledgeable man who helps to foster an understanding of the material
- I like Dr. White's teaching method. His style is not for everyone, but it definitely works for me.
- He didn't bore the class with too many lectures and instead focused on current biochemical issues to teach us how these problems relate to the information being taught.
- The instructor facilitates the learning experience by encouraging participation and in class group work. The instructor's PBL teaching strategy can be very effective if the student puts in the necessary amount of work outside of class. The professor is

always asking questions in order to test whether or not the class understands the material being presented. I enjoyed the professor's lectures and felt as if I was able to learn more effectively through them rather than group work.

- Dr. White is an excellent professor. He knows basically anything there is to know about Metabolism..
- Well done, I liked having lectures in class as well as just group discussion. Dr. White knows his stuff and presents it well.
- Dr. White knows exactly what helps students learn the material better. He is very encouraging and teaches you how to get to the answer yourself, rather than just giving it away.
- very knowledgeable and passionate about the material.
- Dr. White is very knowledgeable about the subject and is always willing to help you out if you have a question about the subject. He would not give you the answer but rather help you determine the answer by providing hints which in the end is more beneficial than just a telling someone the answer.
- He was very interested in the subject matter and helped me understand the material.
- Dr. White is a wonderful professor that wants to challenge his students so that they learn to think conceptually rather than simply memorize. He is very helpful if you ask any questions.
- spoke well, sometimes notes were a little overwhelming because of the small amount of time.
- Dr. White does an excellent job at engaging the students and encouraging active learning outside of class.
- Professor White knew everything off the top of his head. He shared this knowledge without making us feel stupid. If you were incorrect in your thinking, or just plain wrong, he corrected you in the gentlest and kindest way so as to not make you feel bad.
- Dr. White is very helpful and nice. He is a great professor.
- Although metabolism can be a dry topic, Dr. White was very effective in making it interesting for the class. He often related lessons to interesting contexts and applications. His website was also very helpful and provided several useful resources.

Question ID: 3608

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

Responses (25 of 29)

- He helps you think critically about the problems.
- Promoting student involvement in their own learning. Developing interesting ways to present material. Contextualizing material.
- The professor encouraged participation in every way, even if we do not give the right answers as long as we engage ourselves with the problem at hand.
- he makes you research questions and answers which helps you understand and remember the material
- Forcing students to go beyond a superficial understanding.
- Professor White is very good at helping you solve problems without giving up the answers. He give help but seeking the answer involves in depth analysis.
- He knows how to guide students' thinking paths and create interest in students.
- He is great at helping you get the answers yourself. While it would be easier if he would just hand you the answers to the problem, it is a great deal more rewarding and helpful to try to figure it out yourself.
- He ask the right questions to help the student figure things out, and thus understand better
- I know that he won't tell me the answer to a question, and so it's up to me to find out. It has taught me to just keep asking questions if I ever want to know the reason for something.
- Dr. White asks intriguing questions that are meant to spark creativity with biochemical problem solving. We learn as we get closer and closer to the answer if there is one.
- Professor White challenges the depth of a student's knowledge. He wants students to truly understand a topic instead of memorizing it.
- He genuinely wants his students to understand this subject matter, and he'll go out of his way to assure this.
- Very helpful when something is not fully understood but does not give away the answer, just leads you in the right direction
- Dr. White is very good at facilitating discussions even if the class is not in the discussion mood(mondays, mornings in general).
- Explains concepts in a way that is easier to understand at any level. Relates concepts to other ideas in a very interesting way.
- he makes you think outside the box, and ask questions you never would have thought about. Inspiring. never had another teacher that did this.
- Dr. White is really good at motivating students to learn about a subject by using his PBL philosophy.
- He doesn't give you the answers he helps you figure them out on your own.
- Dr. White is very organized and provides his students with the necessary materials to succeed in his class.
- willing to use the board to diagram reactions and keep class involved in the discussion of those reaction

- Dr. White seems to know essentially everything about metabolism. However, he does not give you the answers. He helps you come to the conclusions on your own.
- Professor White corrects you in a great way, directing your thinking to the correct answer without making you think you are stupid. He also answers your questions in a neat way. In answering, he gets you to answer your own question, gently guiding you in the right direction.
- The teaching method is encouraging us to understand the materials, not just memorization.
- I enjoyed the case studies as a way to learn about different areas of metabolism. It let us practice our problem-solving skills, while discovering more about pathways and their regulation.

Question ID: 3609

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

Responses (22 of 29)

- N/A
- Sometimes during PBL sessions, Professor White can't sit down with a group until the very end of class, so if the group hits a roadblock it's difficult to overcome. It may be difficult to find a solution to this problem because there were 6 groups and decreasing the amount of time spent with each group would also be detrimental.
- nothing really. his pbl method really works
- One way would be to give a more detailed layout of grading scale. Other than that, all of his methods are very useful.
- Prof White could outline what he is looking for on the exams and what material he will be focusing on.
- The final group project felt a little unfair since some groups discovered Dr. White's paper while others did not. The groups that followed his paper had a template of what to look for so there was less trial and error.
- Cant thing of anything
- None
- I have no suggestions
- There is not much room for improvement in my opinion. I do believe that Professor White's lectures were very impactful in the sense that I was able to learn a lot from them. His pace while lecturing is excellent, allowing the proper amount of time for note taking. With regards to group work, it would be helpful to have a sense of direction when working on case studies. For example, Professor White could hint at what to specifically focus on or analyze after reading the problem. This would give students a little lead way, which saves time.
- Going over the homework would be helpful.
- I think that switching groups once through the semester like in other classes adds to discussions and brings different perspectives.
- The only issue I ran into was that some of the assignments were a bit confusing and difficult to understand. I wasn't very clear on what I was looking for.
- change nothing
- I believe that if Dr. white provided his students with a couple more lectures to introduce topics instead of giving out PBLs this would facilitate the learning about a particular topics.
- N/A
- The one thing is that he could go over the problem sets more so that students can see where they were wrong.
- allot more time for subjects that take longer. Assign problem sets weekly. Include grading for quizzes in the syllabus. Assign the group project much earlier.
- none
- Be a little more clear on topics to study for the exams. A lot of people felt as if they weren't completely sure on what to study, other than prior exams. Also, on the final project, provide clearer directions, and possibly change it to a different time in the semester so it doesn't coincide with finals.
- I hope he give the answer keys for the previous exams.
- I was very satisfied with Dr. White's teaching.

Question ID: 3436

Comment on the course.

Responses (21 of 29)

- One of my favorite courses that I've taken at UD.
- The course allowed me to learn about intermediary metabolism at a very satisfying level of depth and nuance. It also gave me practice in finding primary resources for research papers, and occasionally even for problem sets.
- The course encouraged more to active learning than memorization, and this was a new but a good experience for me.
- great course. very hard and challenging but is still a great course.
- Interesting but challenged basic knowledge in order to motivate students to seek the origin of the facts.
- While it was inevitable that some of the material should be memorized, this course focused more on understanding the concepts.
- Overall an enjoyable course that 100% requires an understanding of what is going on rather than memorization.
- Good and interesting
- This is a difficult, but rewarding course. It is all about seeing the patterns in different kinds of chemical reactions that occur in biology and being able to put those together like pieces of a puzzle.
- The course is well organized and builds on past biochemistry classes rather than overlapping.
- I enjoyed how the course applied real life situations to the material instead of just learning the chemistry.
- Overall, I feel I have learned a lot about metabolic pathways. I think I will remember the material covered in this class for one because it tied a lot of topics I've learned in other classes together and I do not feel that I just memorized things from a textbook for exams.
- The way this course is designed is a great way of teaching students. I learned many things in this course that I thought I knew or understood prior to taking the class. I also learned to apply my knowledge and solve problems I did not know the answer to. Instead of just memorizing concepts, I was able to understand them since I was constantly thinking and looking for answers. The course was very heavy on structures in the beginning, which I found to be very helpful.
- definitely not a memorization course. all the information is available, its how to use the information that is what i learned in the course.
- no comment
- n/a
- I enjoyed this course because it challenged me and also allows one to use the knowledge they have gained from previous courses. I also like PBL style learning.
- Memorization is not sufficient for the exams. I had to understand the material well enough to apply it to a novel situation.
- Overall, the course was extremely challenging. Not having a textbook and following it made studying for exams very overwhelming. However, there was never any busy work and I learned more than I ever thought possible.
- This course is interesting.
- Midterm was fair but not easy. Problem sets were also challenging but were interesting and helped understanding of the material.

Question ID: 4649

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

Responses (23 of 29)

- You will learn a lot of material that will help you truly understand biochemistry, but will not have to needlessly remember pathways that you forget soon after the test. I would recommend it to anyone wishing to go to graduate/professional school.
- The class provides an in-depth and nuanced examination of some of the most important biochemical pathways. Information is consumed in a variety of ways including lectures, group problem-solving sessions, problem sets and research papers.
- The course focuses mainly in active learning than memorization. The class itself will demonstrate how well one can truly understand intermediary metabolism.
- An interesting and challenging course. It will force you to go beyond a superficial understanding, while it may be difficult, it is rewarding.
- It is a very unique course involving partially lecture/group work and partially lecture. In order to succeed, make sure you stay on top of the homework and material to avoid getting behind.
- Someone who is interested in learning more in-depth about different types of metabolism.
- A course designed to get you thinking about the subtleties involved in metabolism and to give you the tools to answer questions related to metabolism.
- Hard but worth your time and effort
- This course takes all that you know about chemical pathways and generalizes it so that you can see any chemical pathway

- and know all of the individual parts without necessarily knowing every specific chemical involved.
- The course is hard work but the most interesting biochemistry class that I've taken. After doing all of the work, you do feel as though you've learned something.
 - CHEM643 is a challenging, graduate level biochemistry course in which one works within a group very frequently in order to analyze a case study related to the topic being covered at that time. One should expect to spend a good amount of time out of class studying course material.
 - I'll be honest. I wouldn't recommend this class to anyone. If you aren't already required to take it you probably aren't going to be interested.
 - Tough class which covers many metabolic pathways and stresses understanding rather than memorization. Takes work but you learn a lot and can definitely do well if you put in the effort.
 - The course is very challenging but you will walk out feeling more confident in being able to use your knowledge to solve future problems. It will also help you discover how you learn and how to take basic knowledge just a step further.
 - very interactive. hands on problem solving. very difficult but rewarding.
 - This course is challenging but it gives you a lot of insight into how metabolism works and could be helpful specially if you want to go to grad school and work on biochemical research
 - Difficult course but you learn a lot about metabolism.
 - CHEM 643 teaches about intermediary metabolism and presents in it both a PBL and lecture style.
 - Learn how to find out the answers to questions for yourself and learn to work in groups really well.
 - I would recommend the course to any one interested in learning about metabolism who is willing to put in a lot of effort outside of class. I would caution that lack of interest in the subject might lead to students being less willing to spend time researching outside of class.
 - CHEM-643 is a class in which you will learn about the patterns in metabolism. It will be challenging, at times hair-pulling, but you will take away a lot of new knowledge and get out of it what you put into it.
 - This course has many activities and projects that need a lot of work after the course.
 - CHEM-643 is a challenging but very informative course that emphasizes problem-solving and case studies over lectures.

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 (19 of 29)

- I felt the syllabus was adequate. However, I still do not know how the photosynthesis quiz will be factored into our grade.
- The syllabus was true to the nature of the class, particularly in terms of group work and the initiative necessary to succeed in the class. I think you underplay the value of the Lehninger textbook; I found it very useful for many problem sets. At the same time you could say that not all pertinent questions can be answered by this book or any other resource used by itself. Also, there were no formal assignments due for PBL studies, as stated in the syllabus.
- Very detailed and informative.
- The syllabus adequately covered what was discussed in the course.
- Yes. The syllabus was good and informative
- The course syllabus is fairly all-inclusive, so there isn't really anything missing from it.
- I wouldn't change anything in the syllabus. I thought it described the course sufficiently.
- The syllabus adequately describes this course.
- Syllabus does well to describe class, I think it could explain final project a little more.
- The course syllabus describes the course perfectly.
- syllabus was pretty appropriate and helpful i think.
- The syllabus clearly states what would be accomplished during the course and the mechanics behind grading.
- The syllabus adequately described the course. There were no aspects unclear.
- I feel that the syllabus provided an accurate outline of the course and reflected what was expected of the students.
- the course syllabus didn't include the quiz grade, which lead to a little confusion.
- The syllabus was very clear
- The final project should have clearer, or more inclusive, guidelines/directions.
- I think the syllabus is clear. And this course meet the goals.
- The syllabus did well in preparing us for what to expect from the class. The quiz was not included in the grade breakdown, and a lot of us were wondering how much it was worth.

Question ID: 13333

In groups you have worked through three extended case study problems, 1. Life without oxygen, 2. Are you what you eat?, and 3. Plants vs. Animals in the Dining Hall. Please rank these three in terms of their overall value to your learning. And state the virtues of the one you rank number one.

Responses (23 of 29)

- 1>2>3
- #1: Are you what you eat? #2: Life without oxygen #3: Plants vs. Animals "Are you what eat?" emphasized the interconnectedness of many important pathways. It also introduced us to the Calvin Cycle and Pentose Phosphate pathways in a very interesting way that enabled us to learn their steps and the effect certain steps have on function.
- Plants vs animals, are you what you eat, life without oxygen. Plants vs animals provided the most realistic and informative scenario in my opinion.
- 1, 2, 3. The publication used in life without oxygen was very useful in understanding the purpose of the case study. We seemed to have run out of time to finish Plants v. Animals in class.
- 1. Life without oxygen 2. Are you what you eat 3. Plants vs animals While it may be because we spent more time covering Life Without Oxygen, I learned more about the chemistry behind metabolism in different organisms.
- 1. Life without oxygen changed the way I thought about how metabolism worked. In my head it was a very static and rigid process but after that case study, I have a whole new view. 2. Are you what you eat? 3. Plants vs. Animals in the Dining Hall
- 3-least 2-semi 1-most
- I liked "Are you what you eat?" the most, and then "Plants vs. Animals in the Dining Hall," and "Life without oxygen." I think that the "Are you what you eat?" case study took us through some common misconceptions in biochemistry.
- Life without oxygen - i found it to be perfect as the first PBL to set up for the course because it started to make us think about everything being related.
- 1. Life without oxygen 2. Are you what your eat? 3. Plants vs. Animals in the Dining Hall
- Life without oxygen and you are what you eat were a much more valuable experience than plants vs animals in the dining hall because they were less open-ended and much more focused.
- 1. Plants vs. Animals in the dining hall, 2. Are you what you eat?, 3. Life without oxygen. Vegetarianism is a new popular thing and it was interesting to learn the effects it has on our body.
- 1. Life without oxygen really helped look at how the flux of metabolic pathways is influenced. 2. Plants v Animals in the dining hall was good to set stage for final project and investigate what it really means to be an essential or non-essential amino acid. 3. Are you what you eat? was good in that it helped me learn about photosynthesis and the calvin cycle which I had pretty much forgotten since basic biology
- 1. Are you what you eat is the article I found to be the most valuable because it was then that I begin really understanding different pathways and how they are connected. It also led me to study other pathways and enzymes involved. 2. Life without oxygen 3. Plants vs. animals
- 1. oxygen. 2. what you eat. 3. plants animals dining. life without oxygen helped me to see how differnt pathways are working simultaneously to help the cell/animal thrive/ switch on and off in response to a stimuli. very big concept and interesting too.
- 1. Plants vs. Animals 2. Are you what you eat 3. life with out oxygen Plants vs. Animals provide us with a lot of information about how nutrients are used by the body and how our diet determines how healthy and individual is. This case study required a lot of researching into different areas not just biochemistry but also nutrition which provided a greater learning experience than the other two case studies.
- 1,2,3
- I feel the ranking for me is: 1. Life without oxygen, 2. Are you what you eat, and 3. Plants vs. Animals in the dining hall. I think the first gave us a good introduction into thinking conceptually and examining research about metabolism.
- 1=2>3 1 and 2 had plenty of time to be understood thoroughly and I learned lots out of these two.
- 1. Plants vs animals - helped me understand where nutrients come from and different food sources. 2. life without o2 3. Are you what you eat
- Of most value to my learning was Plants vs. Animals in the Dining Hall, then Are you what you eat?, and then Life without oxygen. Plants vs Animals most closely related to our current lives, and made me the most interested and able to relate to what I was learning.
- 2,1,and 3 I think the 2nd case study is very interesting and related a lot of materials in biosynthesis.
- 1) Life without oxygen--taught us how to read a new type of graph, reinforced some concepts on glycolysis and gave some understanding of glycolysis regulation. 2) Are you what you eat? 3) Plants vs animals

Question ID: 13334

The final group project was intended to be a capstone biochemistry experience that integrated metabolism with other biochemistry courses you have had. Was it successful in this regard? Explain why or why not.

Responses (21 of 29)

- I felt it was an excellent synthesis of everything I've learned throughout my undergraduate career.
- I think the final group project was somewhat successful in integrating information from previous courses. Understanding the function and characteristics of certain amino acids and the details of its biosynthetic pathway were necessary to be successful, and it made us explore the many databases available of known protein sequences and pathways. But at the most basic level, the project was a statistical study. Although studying and using details about DNA operons, protein structure and mechanisms could inform the project in useful ways, they were not necessary to get the job done. Since time was of the essence, these were the things that were neglected from analysis. However, listening to each group's presentation filled the void in our own projects, since every group took a different approach that integrated a different part of our past experience.
- I think we focused so much on the evolutionary aspect, if maybe you required an element from molecular, genetics, etc. we could have delved more into those topics.
- It was very successful. It involved analysis of genetics, metabolism, and protein function research.
- It was successful because we had to think about the amino acids in a way we did not explore in the class itself, but in previous classes.
- I don't think there was enough time, although it definitely made me consider everything I've learned in chemistry up until that point. Honestly the senior seminar would be much more beneficial if we had that time to work on this and make it more in depth.
- The final project was confusing, and still is slightly confusing
- Yes. I used methods I learned in another class to complete my portion of the paper.
- The final project was a capstone in the sense that it was definitely a graduate level project that could even be expanded on as a grad thesis, and it had me using a lot of prior biochemical knowledge.
- Yes, I feel that it incorporated many different aspects of chemistry that I have learned throughout my courses.
- I believe it was successful in that it required me to use all the different databases and references I have learned about through my chemistry and biochemistry experiences and made me think about a problem which I had not thought about before.
- Initially I was a bit confused as to what answers I was searching for but once I understood the assignment, I was able to use it to help me review many different concepts, structures, pathways, and discover new concepts about the function of enzymes. Thanks to my group members, I also learned about new research sources and scientific tools I didn't even know existed.
- yes. we had to use knowledge from microbiology, and all of the biochemistry courses, largely 641 and 642.
- Yes, the final project required us to look back into everything we had learn to be able to come up with a reasonable explanation as to why things are the way they are.
- Yes, we were made aware that metabolism is complex and there is no straight answer.
- Yes because we explored different things within the genome and tried to look more into the genetics of the species.
- The research was a little harried since Thanksgiving week took many of us out of town and the group portion was difficult to coordinate.
- Yes, the project resulted in me examining the genetic code and looking at overall abundances of amino acids in the proteome of particular organisms.
- It was successful in this regard. However, I feel like it could have been a lot more successful had the timing of it been not at the same time as preparing for final exams.
- Yes, I spent a lot of time on it. I became familiar with a lot of stuff I learned before. And I also got to know some very useful websites.
- It was successful, in that we had to consider many topics past biochemistry, such as genetics and protein structure.

Question ID: 3611

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

Responses (15 of 29)

- I felt the course runs rather smoothly. It was a pleasure to take this course and I will remember it as among my favorite courses. I especially like how we tie biochemistry into real world applications. I however, am not really a fan of the final project. This may be just because I don't have an interest in bioinformatics. While it doesn't catch my interest, I do appreciate the value of the exercise and think it should still be retained.

Final Course and Instructor Evaluations for CHEM-643 Fall 2013

- This class was great. Both the problems sets and group problems made me think about intermediary biochemistry in a very critical way. If you could find a way to meet with groups during problem-solving sessions more often that would be nice, but there are so many groups and so little time in class. Thank you for teaching this topic so wonderfully!
- It would be nicer to know what to focus on for the exams, beyond what is on the posted exams. It would also be nice to have a key for at least one of the exams.
- I thought it was a good and fun class
- I don't know if this is anonymous or not, but I think it's worth mentioning that only two of the group members put in a significant amount of work on the group project. I don't know how this can be helped because there are always going to be the people who do more and the people who use the group as an excuse to slack off, but it was a little infuriating.
- I think switching groups maybe once during the semester or starting out with temporary groups could help facilitate more discussion later on as different opinions will be brought together more often.
- The course is the most challenging course I've taken but I also learned so much more than I ever did in any other course. I was able to think for myself, instead of just looking it up in a book or online. I learned what steps I need to take to solve a biochemistry problem. I was able to fine tune any knowledge I thought I understood completely but I kept learning new things everyday from my group members and Dr. White.
- I think this course is most difficult and most fun course ever. love hate relationship but i learned sooo much so it works perfectly. dont change.
- no comment.
- n/a
- I like being able to work with other students because you often learn more from your peers and feels more comfortable learning from them.
- Timing of the course could be improved.
- I enjoyed the course, and learned a lot. I think the course would be very challenging to someone with less interest in metabolism. The group part of the course, however, allows for some students to help motivate others. Overall, I can not think of any real ways to improve the course
- I like how Professor White loved to share his knowledge, and encouraged us to do the same and help one another. However, I felt like it should have followed a textbook or two in some way, or at least a textbook personalized by Dr. White with his notes and suggested readings. I have never worked so hard in a class, and I hope his exam writing style doesn't hurt my reflection of what I have learned.
- I think I do my best problem-solving with discussing it in a group. I would have liked to see a group component on the midterm and final. I enjoyed the case studies and problem sets