

Detailed Responses for CHEM-643, Intermediary Metabolism, for Fall 2014
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: | 23 / 25 |
|-------------|-------------------|----------|---------|--------|----------------|-----------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 4.83 |
| Total | 0 | 0 | 0 | 4 | 19 | Std. Dev: | 0.39 |
| Percent | 0% | 0% | 0% | 17.40% | 82.60% | 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: | 23 / 25 |
|-------------|-------------------|----------|---------|--------|----------------|-----------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 4.22 |
| Total | 0 | 2 | 3 | 6 | 12 | Std. Dev: | 1 |
| Percent | 0% | 8.70% | 13% | 26.10% | 52.20% | Median: | 5 |
| | | | | | | Mode: | 5 |

QID 3427 - The instructor encouraged class participation.

| Scale text | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree | Total: | 23 / 25 |
|-------------|-------------------|----------|---------|--------|----------------|-----------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 4.7 |
| Total | 0 | 0 | 1 | 5 | 17 | Std. Dev: | 0.56 |
| Percent | 0% | 0% | 4.30% | 21.70% | 73.90% | 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: | 23 / 25 |
|-------------|-------------------|----------|---------|--------|----------------|-----------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 4.22 |
| Total | 1 | 1 | 3 | 5 | 13 | Std. Dev: | 1.13 |
| Percent | 4.30% | 4.30% | 13% | 21.70% | 56.50% | Median: | 5 |
| | | | | | | Mode: | 5 |

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

| Scale text | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree | Total: | 23 / 25 |
|-------------|-------------------|----------|---------|--------|----------------|-----------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 4.13 |
| Total | 0 | 3 | 2 | 7 | 11 | Std. Dev: | 1.06 |
| Percent | 0% | 13% | 8.70% | 30.40% | 47.80% | Median: | 4 |
| | | | | | | Mode: | 5 |

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: | 14 / 25 |
|-------------|-------------------|----------|---------|--------|----------------|-----------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 4.43 |
| Total | 0 | 0 | 2 | 4 | 8 | Std. Dev: | 0.76 |
| Percent | 0% | 0% | 14.30% | 28.60% | 57.10% | 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: | 22 / 25 |
|-------------|-------------------|----------|---------|--------|----------------|-----------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 4.5 |
| Total | 0 | 0 | 3 | 5 | 14 | Std. Dev: | 0.74 |
| Percent | 0% | 0% | 13.60% | 22.70% | 63.60% | 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: | 22 / 25 |
|-------------|-------------------|----------|---------|--------|----------------|-----------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 4.27 |
| Total | 0 | 2 | 3 | 4 | 13 | Std. Dev: | 1.03 |
| Percent | 0% | 9.10% | 13.60% | 18.20% | 59.10% | Median: | 5 |
| | | | | | | Mode: | 5 |

Course Evaluation Responses

Detailed Responses

Total = Responded/ Enrolled

QID 4329 - The course was well organized.

| Scale text | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree | Total: | 23 / 25 |
|-------------|-------------------|----------|---------|--------|----------------|-----------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 4.22 |
| Total | 0 | 3 | 2 | 5 | 13 | Std. Dev: | 1.09 |
| Percent | 0% | 13% | 8.70% | 21.70% | 56.50% | Median: | 5 |
| | | | | | | Mode: | 5 |

QID 4330 - The course textbook was very useful.

| Scale text | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree | Total: | 20 / 25 |
|-------------|-------------------|----------|---------|-------|----------------|-----------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 3.45 |
| Total | 0 | 2 | 8 | 9 | 1 | Std. Dev: | 0.76 |
| Percent | 0% | 10% | 40% | 45% | 5% | Median: | 3.5 |
| | | | | | | Mode: | 4 |

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

| Scale text | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree | Total: | 23 / 25 |
|-------------|-------------------|----------|---------|--------|----------------|-----------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 4.7 |
| Total | 0 | 0 | 1 | 5 | 17 | Std. Dev: | 0.56 |
| Percent | 0% | 0% | 4.30% | 21.70% | 73.90% | Median: | 5 |
| | | | | | | Mode: | 5 |

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

| Scale text | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree | Total: | 23 / 25 |
|-------------|-------------------|----------|---------|--------|----------------|-----------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 4.74 |
| Total | 0 | 0 | 1 | 4 | 18 | Std. Dev: | 0.54 |
| Percent | 0% | 0% | 4.30% | 17.40% | 78.30% | Median: | 5 |
| | | | | | | Mode: | 5 |

QID 4650 - I am a

| Scale text | Under-graduate | Graduate Student | Total |
|-------------|----------------|------------------|---------|
| Scale value | A | B | |
| Total | 19 | 3 | 22 / 25 |
| Percent | 86.40% | 13.60% | |

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

| Scale text | <3 h/wk | 3-6 h/wk | 6-9 h/wk | 9-12 h/wk | >12 h/wk | Total |
|-------------|---------|----------|----------|-----------|----------|---------|
| Scale value | A | B | C | D | E | |
| Total | 1 | 12 | 9 | 0 | 1 | 23 / 25 |
| Percent | 4.30% | 52.20% | 39.10% | 0% | 4.30% | |

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 | 13 | 7 | 3 | 0 | 0 | 23 / 25 |
| Percent | 56.50% | 30.40% | 13% | 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 | 10 | 7 | 4 | 2 | 0 | 23 / 25 |
| Percent | 43.50% | 30.40% | 17.40% | 8.70% | 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 | 13 | 7 | 1 | 2 | 0 | 23 / 25 |
| Percent | 56.50% | 30.40% | 4.30% | 8.70% | 0% | |

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

| Scale text | Never | Rarely | Sometimes | Frequently | Always | Total: | 23 / 25 |
|-------------|----------|----------|-----------|------------|----------|------------------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 4.96 |
| Total | 0 | 0 | 0 | 1 | 22 | Std. Dev: | 0.21 |
| Percent | 0% | 0% | 0% | 4.30% | 95.70% | 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 | 7 | 7 | 1 | 8 | 0 | 23 / 25 |
| Percent | 30.40% | 30.40% | 4.30% | 34.80% | 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 | Total |
|-------------|----------------|----------|-----------------------|----------|-------------------|---------|
| Scale value | A | B | C | D | E | |
| Total | 1 | 8 | 6 | 8 | 0 | 23 / 25 |
| Percent | 4.30% | 34.80% | 26.10% | 34.80% | 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 | 5 | 10 | 6 | 2 | 0 | 23 / 25 |
| Percent | 21.70% | 43.50% | 26.10% | 8.70% | 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: | 23 / 25 |
|-------------|-------------------|----------|----------|----------|----------------|------------------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 3.39 |
| Total | 0 | 4 | 9 | 7 | 3 | Std. Dev: | 0.94 |
| Percent | 0% | 17.40% | 39.10% | 30.40% | 13% | Median: | 3 |
| | | | | | | Mode: | 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 | Total: | 23 / 25 |
|-------------|--------------------------|-----------------|----------------|--------------|-----------------------|------------------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 4.22 |
| Total | 0 | 0 | 3 | 12 | 8 | Std. Dev: | 0.67 |
| Percent | 0% | 0% | 13% | 52.20% | 34.80% | Median: | 4 |
| | | | | | | Mode: | 4 |

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

| Scale text | Hardly Ever | Occasionally | Sometimes | Frequently | Almost Always | Total: | 23 / 25 |
|-------------|--------------------|---------------------|------------------|-------------------|----------------------|------------------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 3.83 |
| Total | 1 | 2 | 5 | 7 | 8 | Std. Dev: | 1.15 |
| Percent | 4.30% | 8.70% | 21.70% | 30.40% | 34.80% | Median: | 4 |
| | | | | | | 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: | 23 / 25 |
|-------------|--------------------------|-----------------|----------------|--------------|-----------------------|------------------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 3.13 |
| Total | 4 | 3 | 6 | 6 | 4 | Std. Dev: | 1.36 |
| Percent | 17.40% | 13% | 26.10% | 26.10% | 17.40% | Median: | 3 |
| | | | | | | Mode: | 3, 4 |

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

| Scale text | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree | Total: | 23 / 25 |
|-------------|--------------------------|-----------------|----------------|--------------|-----------------------|------------------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 4.26 |
| Total | 0 | 1 | 4 | 6 | 12 | Std. Dev: | 0.92 |
| Percent | 0% | 4.30% | 17.40% | 26.10% | 52.20% | 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: | 23 / 25 |
|-------------|--------------------------|-----------------|----------------|--------------|-----------------------|------------------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 4.22 |
| Total | 2 | 0 | 1 | 8 | 12 | Std. Dev: | 1.17 |
| Percent | 8.70% | 0% | 4.30% | 34.80% | 52.20% | Median: | 5 |
| | | | | | | Mode: | 5 |

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

| Scale text | Strongly Disagree | Disagree | Neither | Agree | Strongly Agree | Total: | 23 / 25 |
|-------------|--------------------------|-----------------|----------------|--------------|-----------------------|------------------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 4.22 |
| Total | 0 | 2 | 3 | 6 | 12 | Std. Dev: | 1 |
| Percent | 0% | 8.70% | 13% | 26.10% | 52.20% | 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: | 23 / 25 |
|-------------|-------------|--------------|-----------|------------|---------------|-----------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 3.83 |
| Total | 2 | 0 | 6 | 7 | 8 | Std. Dev: | 1.19 |
| Percent | 8.70% | 0% | 26.10% | 30.40% | 34.80% | Median: | 4 |
| | | | | | | Mode: | 5 |

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 | 9 | 3 | 1 | 0 | 23 / 25 |
| Percent | 43.50% | 39.10% | 13% | 4.30% | 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: | 23 / 25 |
|-------------|-------------------|----------|---------|-------|----------------|-----------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 2.3 |
| Total | 6 | 10 | 4 | 0 | 3 | Std. Dev: | 1.26 |
| Percent | 26.10% | 43.50% | 17.40% | 0% | 13% | Median: | 2 |
| | | | | | | Mode: | 2 |

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: | 23 / 25 |
|-------------|-------------------|----------|---------|-------|----------------|-----------|---------|
| Scale value | 1 | 2 | 3 | 4 | 5 | Mean: | 2.22 |
| Total | 10 | 5 | 3 | 3 | 2 | Std. Dev: | 1.38 |
| Percent | 43.50% | 21.70% | 13% | 13% | 8.70% | Median: | 2 |
| | | | | | | Mode: | 1 |

**Essay Responses for CHEM-643, Intermediary Metabolism for Fall 2014
Instructor Harold Bancroft White, III**

Question ID: 3435

Comment on the instructor.

Responses (17 of 25)

- Dr. White is a great teacher who teaches a class like none I have ever taken (except CHEM342 to a lesser extent). I mean this in a good way. He gives us the necessary resources to learn as much as we want.
- Was helpful and provided insight into problems. Was more focused on our understanding rather than getting through all the material. Approachable and caring. Always had a good attitude.

- Great guy
- Dr. White is one of the best professors I have ever had in my life. Instead of making the class boring and filled with information like almost all the other classes, his assignments made me think about the problem in a different way. I wish all my classes to be like that.
- He is a good mentor for the all students.
- Professor White obviously knows what he is talking about, but the material for the class is based largely on outside research. Needs to have a book for the class in the bookstore.
- Dr White Presented the material in a novel way for me. For the first time I felt like I was in a class to learn and not to try to remember.
- He is a great instructor but maybe a good lectures or two would have really put structure to this class.
- Hal White is a great instructor. I think I just have a problem with grasping the concepts fully.
- Great class and interesting material but I felt that the lectures in the beginning of class were drawn out more than they should have been. Dr. White knows what he's talking about and presents them in ways I had not thought about.
- Dr. White is extremely knowledgeable, but did not convey his ideas in a way that was easy to understand and retain.
- He demonstrates an excellent subject knowledge and a good understanding of the learning process and problems students face in his course.
- Dr. White has been my favorite professor at UD. I have a lot of respect for him, and I am sad that he is leaving.
- He understands biochemistry and wants to teach it to his students. A truly nice guy who just wants to teach students.
- Very helpful and understanding.
- Prof. White is a good instructor, and he answers a lot questions.
- It was evident that Dr. White was invested in the course and the student's learning.

Question ID: 3608

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

Responses (15 of 25)

- The scenarios in which he presents the in class problems give a nice added depth to the learning and make it more interesting.
- Facilitate learning and thinking. Through time shows how to approach and think about problems.
- His friendliness makes him very approachable and he is understanding of other responsibilities students have. I think he is a great lecturer and wish he would do it more often.
- He always ask the questions to students that so they can think about the metabolism. And he always encourage students to overcome the problem.
- 1. Assignments given by Dr. White re unique in the fact that they allow the student to really do the research. The student can use resources such as the internet to get to the answer without it being just given. 2. It is about understanding the material with Dr. White. You cannot get to the answer without understanding the material because He sure won't give you the answer. And what a feeling when you finally get that answer!!! You feel great because you understood the concept. 3. Dr. White's method of teaching

and studying can be applied in every aspect of life. And that is what I am taking from this course.

- He makes great problems and gets you thinking
- He doesn't put you down or discourage you, but he encourages you and even if the answer is wrong he makes sure you understand why.
- Dr. White definitely helps move the group in the right direction during case study discussions. This made my group not get hung up on small details.
- He presented interesting and pertinent case studies which gave good direction for the class.
- He can readily identify areas where students are both lacking in knowledge of subject matters and specifically on what students get caught up on.
- He facilitates and leads students in the right direction without giving away the answers. If a student is completely lost, he'll put them on the right track, but ensure that they understand why they are wrong.
- He explains concepts well, especially during the Calvin cycle's carbon scramble.
- Explain the material in a realistic context
- He helps a lot in the group discussion.
- If he lectures, he does so by writing on the board instead of using powerpoints. It is easier to understand, take notes, and realize when I have a question.

Question ID: 3609

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

Responses (17 of 25)

- You will be missed Dr. White
- I think sometimes he was too reserved about providing answers to the class when it was clear we could have used a push in the right direction.
- Nothing comes to mind.
- Less in-class PBL stuff. I think class should mainly just be lectures and students should have to meet up outside of class with their groups to work through PBL problems. I got nothing out of doing those in class and felt like Dr. White's expertise on the subject should be taught to students more directly. I understand that the class tried to build upon independent learning skills, but this should be left to outside of class.
- N/A
- I liked the his weekly homework problem sets and I learned many things from it. But I suggest him to spend more time to explain and review the problem sets, also, the group work problems by posting the answer keys or explaining during the class.
- Needs a bit more organization.
- The final research paper assignment could be given earlier in the semester. By mid-term, I believe students should start thinking and working on their final paper, because of the scope of the work needed.
- Dr. White focuses a lot on Problem Based Learning. However, I think providing interesting presentation on rare metabolic pathways or mixing up the format more would make this class much more exciting.
- I think that the class was challenging and that I wish he had more of a structure of his teaching methods. I felt like everytime it came down to study for a quiz or an exam, I wasn't too sure what he wanted us to know because it was broad.

- Put more of an emphasis on what we're supposed to get out of the case studies. I felt like a lot of them were moral questions rather than scientific ones. I definitely learned more from the problem sets than I did the case studies.
- I think if there was a more clear cut lecture or way to get notes on the subject matter the information for the course would be easier to retain.
- Asking more questions when he approaches groups, specifically about what they've already accomplished that session, would have been helpful in furthering discussion with him towards a useful end, but I understand many times when he didn't do this was because there was not enough time in the class to do so.
- Bring in more visual tools.
- Space problem sets out a bit more.
- More organized lecture,
- Post answer keys to case studies or let us know the main take-aways.

Question ID: 3436

Comment on the course.

Responses (14 of 25)

- It was fun.....but really demanding
- CHEM643 requires an understanding of the material rather than memorization more so than any other class.
- There was some memorization although that was explained in syllabus. Enjoyable course. Liked problem solving more than just memorizing material. Fun to discover new things by yourself rather than be told them.
- All material was covered in the first half and not integrated into the second so the exam and the final were the same.
- One of the best courses I have ever had in my life.
- This course is very difficult, but many things are learned from the class. Well organized course.
- Its a good course on thinking about metabolism and not just memorizing it.
- I thought the course was a challenging one for me. It taught me to do alot of outside class work and try to delve into what everything meant after class.
- I felt that the course material was extremely unpredictable, and I spent a lot of time memorizing structures and facts to prepare for the tests and quizzes.
- The PBL format of this course has been an amazing tool in the learning process. This course, as well as CHEM342, teaches students how to teach themselves via strenuous searches of the literature for existing knowledge, and allows for the application of general chemical and biological knowledge to estimate what is not known. The format of this course sets it apart from all other CHEM courses, and I believe the format is necessary for senior BIOC/CHEM students to learn how to be scientists outside of the classroom.
- This course was my favorite. I found the topics very interesting and relevant to me. I think the topics learned and the methods of learning that I developed in this course will help me in the future.
- Challenging but I got a lot out of it
- This course is good.
- The course was valuable in illustrating how different metabolism topics are related.

Question ID: 4649

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

Responses (17 of 25)

- It is an intensive overview of human (and plant) metabolic processes that requires a lot of independent work outside of class.
- The course is about problem solving, learning to research and thinking logically. Memorization will not help but rather understanding and making connections to what you have learned.
- Expect to teach yourself the material, but you will learn metabolism
- You pretty much have to teach yourself everything but if you ever need help Dr. White is always willing and helpful. The main things I got out of the class were 1) in order to get the fullest understanding of a topic in biochem, it is important and necessary to do a lot of independent research from various sources, and 2) how to use and extrapolate previous knowledge in chemistry and biology to new situations.
- This class will connect what you know from Biology and Organic Chemistry
- It is very difficult course, but if you are prepared and spend enough time for the course, you would get many things from this course. I strongly suggest take this course before the graduation.
- This is a hard course with many interesting and fun problems.
- This class has very little lecturing, alot of problem based learning.
- It is important to have a strong background in chemistry and biochemistry to do well in this class otherwise what you end up doing is going backward trying to understand concepts you should have mastered before taking the course. Unfortunately other courses are not PBL based and you tend to forget what you've learned.
- It drills in metabolic concept.
- This class isn't a easy one to get through. It challenges you and makes you think on a whole new level. Sometimes you feel like it can be a ton of work, but in the end you learn more about intermediary metabolism that you never thought you'd know.
- Chem-643 is a class which uses both traditional lecture style and PBL style to teach topics of intermediary metabolism. You will be split into groups and often times work on case studies, in addition to normal lectures from Dr. White.
- CHEM643 is a PBL format class which applies the knowledge you've learned in CHEM641 and CHEM331/332 to complex problems of metabolism and metabolic diseases. This course requires you to be able to do literature searches, and you need to invest a lot of time in it, but I think it's worth it.
- An upper-level biochemistry course that presents metabolism in a range of human, plant, and animal settings.
- CHEM643 is an in-depth look at specific places of metabolism and how it affects our daily lives.
- Its a course that's about half lecture and half Problem based learning. It requires a lot of critical outside the box thinking; its not a memorizing heavy course.
- CHEM-643 was the most useful biochemistry course I have taken so far. It is necessary to complete work out of class in order to be prepared to work in groups during 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 (14 of 25)

- I think the syllabus provides a thorough explanation of not only what the class contains but what it stands for from a teaching/learning standpoint.
- Yes it describes the course well, did not find any unclear aspects.
- The syllabus was clear and informative.
- I thought the syllabus was helpful in giving a clear-cut explanation of how to do well in the course and how students are graded
- I think the syllabus is well explained and fair enough
- No comments
- Yes the syllabus matched what happened in the class.
- I thought that everything was put in a very organized matter and was followed through during each class.
- I feel as if the syllabus isn't expansive enough in terms of describing the vast amount of material covered in the class. Its very general and doesn't truly convey the tremendous depth of knowledge needed for this course. I think it would be good for people who don't have to take this course to get a full grasp on how much time this course will require.
- The course syllabus was clear and represented the class well.
- The grading confused me a bit. I wasn't sure how much the case studies counted.
- The syllabus did adequately describe the course. This is my first PBL course, and I have not seen how this way of learning is better than an old fashioned chalk talk, and taking tests based around them.
- I think it described the course well.
- Yes, the syllabus adequately described the course. It was helpful that links were imbedded.

Question ID: 13333

In groups you have worked through three extended case study problems, 1. Life without oxygen, 2. Are you what your 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 (15 of 25)

- 1. Plants vs Animals in the Dining Hall - I rank this first mainly because I found the topic of amino acid metabolism the most interesting of the three. 2. Are you what you eat? 3. Life without oxygen

- I have trouble ranking those in terms of value because all of them were good learning experiences and even if it was on information I knew about there were many aspects that I did not know and learned. Even though, I found that the ones we spent the most time on such as Are you what you eat was the most valuable but maybe it was because I had more background knowledge and could jump right into the issues rather than devoting time to build a base of knowledge necessary to think about the study. If I were to determine the one of most value by amount of new information, it would have to be plants vs. animals in the dining hall because I have never learned too much about nutrition.
- Life without oxygen taught me the most. Plants vs Animals was not defined what you were supposed to learn and were mostly qualitative questions.
- 1.) Are you what you eat? 2.) Plants vs. Animals... 3.) Life with Oxygen Honestly they all helped me about the same
- 2. Are you what you eat? was the best
- I think 3>2=1. But It would be better to spend more time for case study 3. I should spend more time for all three case studies. I believe, from plants vs animals in the dining hall, i learned many things about Amino acids metabolism and it makes me think about the over all metabolism too.
- Are you what you eat, Life without oxygen, plants vs animals in dining hall The isotopic fractionation is the most useful and concept i learned in all 3 case studies, and we applied it to other topics. The other topics in other case studies seems less applicable.
- 1. Are you what you eat 2. Life without oxygen 3. Plants vs. Animals in the dining Hall. Are you what you eat was a nice way to go back and review or master concepts learned in CHEM- 641.
- Are you what you eat Life without oxygen Plants v Animals
- 1. Are you what you eat? 2. Life without oxygen 3. Plants vs. Animals
- 1.) Life without Oxygen 2.)Plants vs. Animals 3.)Are you what you eat The graphical representations of the various concentrations and rates studied in the first case study offered the most in terms of learning to interpret data.
- 1. Plants vs. Animals 2. Life without oxygen 3. Are you what you eat? I like Plants vs. Animals the best because it discussed vegetarianism in a scientific, unbiased way. It is very relevant to real life.
- Only one of those case studies had my attention, and that was the "Are you what you eat?" The other two I do not even really understand as of now. I would rank it 2>3>1 because the "Plants vs animals in the dining hall" was more interesting than "Life without oxygen."
- 3rd- 3 2nd- 1 1st- 2. Are you What You Eat It summed up photosynthesis very nicely.
- 1. Life without oxygen 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 (16 of 25)

- I believe the final group project has been a well rounded biochemical experience in that we had to take it upon ourselves to find all the necessary information and integrate this information to support (or go against) our hypothesis.

- I believe it was, my only complaint is that I wish we had more time to develop our ideas and direction. I learned a lot of material in a short amount of time and saw connections in several different fields. In a way we were creating and solving our own case study which was probably the intended idea and I believe is a great experience to have going into graduate school as it appears to be very similar learning experience.
- We had not previously learned many of the biosynthetic pathways covered in this course.
- I believe so because it was necessary to consider the biochemical process from many different perspectives to give a full picture
- Yes
- I am still working on it for the final group project, and because of my lack of knowledge it seems very difficult. But with other group members help, I hope it would be successful.
- Yes, it is. We tried we best to do that assignment, and tried to apply everything we learned in the class.
- Yes it has. As a Biology Major, I haven't taken a lot of biochemistry classes but the final project integrated a lot of other biology classes I have taken.
- It was slightly because there was inherently no specificity in the project. Therefore it was hard to determine what to focus on.
- I thought it was because it forces us to look at a bacteria then try to find out if there is selection or not, or if there could be a chance to have any.
- No. There was a very poor group dynamic which made it difficult to work together and establish a good representation of the group's knowledge.
- I have only taken CHEM342 prior to this course, and I am taking CHEM641 during this course. It has not necessarily integrated the courses into a single assignment, but I feel as if I have had to borrow knowledge from biology courses (particularly Microbiology), and I have has to apply all of the PBL skills I have learned in 342/643.
- I think it was successful, but it was a difficult project because of the amount of information that was out there. Our project could have been a thesis, but I think an extra day or two on the project would have been ideal.
- For only 10% of our final grade, it is too much work. It surely is a capstone experience. The amount of detail that is required is ALOT.
- Yes. It involved a lot of research and was a good learning experience that I got to control in terms of where it went and what I learned.
- Yes, I enjoyed looking into my group's organism. The broadness of the project was frustrating at first but it prompted more discussion within my group. Additionally, it allowed us to learn how to use biochemistry tools like BLAST.

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 (14 of 25)

- The only improvement I could see, which is tough since you choose groups at the very beginning of the semester before you get a feel for the class as a whole, is to create groups in which "smarter" students and "hard working" students are more evenly distributed.
- I found the project to be overwhelming especially at the beginning in choosing an organism. Maybe if we had a bit more guidance in choosing an organism and narrow

our search because several hours were spent and subsequently wasted determining if one organism could work and if there was enough information. Perhaps giving an example of a project previously done as an idea what to look for and how to approach the project. In addition I kind of wonder if there are not enough grades for people to gauge the course and how the exams will be. Having 1 quiz and 2 exams can make it difficult to recover if a students approach to the class and exam was wrong because this is such a different course than any others. I know the previous exams are posted but they did not give a clue as to what was discussed in class and what was new in the exam. The only solution I can think of is to make it clear to students that knowing all the pathways and case study answers will not guarantee a good grade. Rather understanding the methods, approaches, data analysis and logical thinking to answers. The material we learned is only half of what is required for the exams, the other half is solving related problems much like in the homework. I do not think you did a poor job at conveying these ideas I just believe students are so used to the other types of tests that they do not know how to prepare or what to expect. Extra time to explain what the exams test would benefit those who struggled or will struggle. In a way the class was more about learning to learn rather than learning biochemistry.

- We were told that answer keys would be posted but that didn't happen beyond the few homework's. Knowing what material we were responsible for would have been helpful.
- Again, I think PBL problems should be done outside of class for homework and class time should be just lectures. Dr. White is a great lecturer and very knowledgable and him directly teaching students is a valuable resource that was under utilized.
- N/A
- N/A
- i personally enjoyed the class, especially the problem set, those problems really drove me to think, and search for answers. But the group assignment is really a pain for me(for some other members in my groups as well). I understand this is inevitable, and not everyone can have a perfect group, but maybe we can choose our own groups at the beginning, or some point in the semester? I really think I could have learned much more if the group relationship was better.
- The format of the course was new to me and there is a culture in PBL that needs to be understood by the student in order to do well in the class. A prerequisite of the course should be to have taken a PBL based course in the past. The course should take in consideration other majors just trying to get a Minor in Biochemistry. Maybe not the right course for Biology Majors pursuing a Minor in Biochemistry.
- I like PBL. I like the group setting and homework. Continue with the structure however, there are ways to make this class interesting.
- I really struggled to be heard in my group. There were very strong participants who made no effort to expand the knowledge of the group as a whole and refused to hear the opinions of any of the group members, (except for the one friend in the group.) Despite my best efforts and attempt to work hard and help with the group work, they very rarely accepted my help or input.
- Adding a 1 hour discussion section, official or unofficial, if possible, would improve the course. It would offer students a universal time to meet up and have group discussions.
- I just do not understand the PBL problems in this course. None of them fully caught my attention as problems worth studying for more than 15 minutes, as opposed to the week we would spend on each one. Perhaps find specific PBL problems that sound out of the ordinary to begin with.
- It was a good course but I thought that having difficult problem sets due every week for about 5 weeks or so in a row was a bit much.
- It would be helpful to know the main topics that we should be learning from the case studies before we begin reading them. My group spent valuable time evaluating the

purpose of each case study at the beginning of class. I feel that this time could have been better spent trying to delve through the issues because class time was limited.