



Biology Department
BIO 4097 Biology Senior Seminar (1 unit)
Dr. Dianne Anderson

Spring 2025

"Science can only ascertain what is, but not what should be, and outside of its domain value judgments of all kinds remain necessary." --- Albert Einstein

PLNU Mission: To Teach ~ To Shape ~ To Send

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service becomes an expression of faith. Being of Wesleyan heritage, we aspire to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

Course description:

Examination and discussion of selected biological issues with an emphasis on the relationship between Christian faith and scientific study. Course is to be taken by Biology, Biology-Chemistry and Environmental Science majors during their last year prior to graduation. (1 unit)

Prerequisite(s): Senior standing as a Biology, Biology-Chemistry or Environmental Science major

Introduction to the course

This course is, in many respects, a capstone to your college experience in one of the majors offered by the biology department. The discussion format that will be used extensively in this course would not work without the background that you have developed in the courses within your major. As we examine issues within the themes of evolution, creation care, and general bioethical topics, we will emphasize the relationship between Christian faith and scientific study. The quality and direction of our discussions will largely be the responsibility of you, the students. In addition to the discussions, you will write a summative essay that addresses your thoughts on either evolution/creation or environmental stewardship (your choice unless you are an Env. Sci. major and are required to write your essay on environmental stewardship).

Instructor

Dr. Dianne Anderson

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Office Hours: Tuesdays 11:00-12:30 & Wednesdays 1:30-3:00 or by appointment

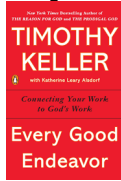
Schedule

Class meetings: Tuesdays 5:15-6:15 in Latter 102

Weekly reading/assignment: Short readings with questions or online quizzes will be assigned for each week's discussion. These must be completed and submitted to Canvas prior to the discussion on each topic.

There is no final exam for the course, so there is no course meeting finals week.

Required book



Every Good Endeavor: Connecting Your Work to God's Work (2014) by Timothy Keller
(order on your own – not in bookstore)

Course learning outcomes

1) Analyze, critically evaluate, and discuss ideas, arguments, and differing points of views on various topics at the intersection of science, faith, and morality.

We will be discussing ideas from a variety of perspectives. In doing so, we want to be hospitable to the ideas of others recognizing that through discourse we can learn from and better understand each other as we respectfully challenge ideas and allow our own thinking to be challenged.

2) Construct a defensible position on particular issues of science and faith in both written and oral formats.

As part of your training here at PLNU, you have been exposed to various topics that integrate faith and science. Hopefully, through personal reflection, you have arrived at your own definition of 'truth' with regards to some of these issues (although this definition of 'truth' will continue to evolve throughout your life). It is important that you are able to articulate this view in such a way that you can explain and defend your position. This includes fully summarizing your own thoughts, addressing alternative views, and then being able to explain/defend your thoughts to others in a clear and organized manner. This will allow you to hold strong to your values while demonstrating grace and respect towards other's differing viewpoints.

3) Acquire skills in working with others as a member of a team.

For the discussions, you will be assigned to a team. However, each person in the team should be prepared to present his/her own portion of the presentation. You will be evaluated on the quality of the presentation, including (a) how well your portion flows (beginning to end) and (b) the accuracy and thoroughness of the content. However, you should also work together with your team so that the 2 or 3 portions (teams will be groups of 2-3) also flow well together. No matter what your career and life goals entail, you will frequently need to work effectively in a group setting. Good teamwork involves every person making a contribution. If tasks are assigned and one person does not do their part, the whole group suffers. If one person always wants to take charge and run the show, others can feel frustrated or diminished. Leadership does need to occur, but collaboration and compromise are important skills to develop for effective group work. Don't let your teammates down. **A major portion (20%) of the presentation grade will be based on adequate participation, preparation, and ability to work with your team (as assessed by evaluations of your peers).**

Attendance, participation, and academic honesty policies

Class attendance will be kept and the school's policies will be enforced as outlined in the academic handbook and according to the policy attached at the end of this syllabus. Since this is a participation course, your attendance is VERY important. You can see that attendance, participation, and attitude during these discussions are a major portion of your total grade (20%). Please communicate regarding any planned absences. Since the class only meets once a week, at 2 absences, I must contact the Vice-Provost for Academic Administration to report your absences, and at 3 absences you will be dropped from the course for non-attendance unless there is an exception granted by the administration. There will generally be no makeup opportunities for discussion or participation points. All missed assignments and classes will result in a zero grade.

The key to participation in the class discussions is to not wait until the last minute to do your reading. If you try to participate without having read the material, everyone will know (it will be obvious). This is the purpose for having the pre-discussion questions/material due prior to our discussion—so that you can reflect on the material and actively take part in the dialog during class.

Important dates: Last day to add/drop: Jan. 24, 2025 Last day to drop with a W: Jan. 24, 2025

Course credit hour information

In the interest of providing sufficient time to accomplish the stated Course Learning Outcomes, this class meets the PLNU credit hour policy for a 1-unit class delivered over 15 weeks. For this course, students will spend an estimated 38 total hours meeting the course learning outcomes.

Biology department and PLNU assessment as part of the course

Some of the course assignments, including one standardized exam, will also be used as pieces of evidence for the assessment of the effectiveness of both the biology department program in terms of helping students to achieve departmental learning outcomes (PLO) and PLNU as a whole (as evidenced by demonstration of core competencies) as required by the university accrediting agency. These assessment purposes and corresponding assignments/exams are shown in the table below. These assignments and exams are required as part of your grade. You will receive points for meeting a minimum score on the Bio-MAPS assessment. Students who fail to take the assessment seriously and who score below a reasonable minimum will be required to complete a written analysis of a journal article to pass this course. The analysis would likely take 4-5 hours to complete.

Assessment purpose	Corresponding assignment/exam
Core competency: Written communication	Science/faith essay
Core competency: Oral communication	Oral presentation on bioethical issue
Core competency: Information literacy	Information Literacy Assignment: Use of sources Oral presentation annotated bibliography
Core competency: Critical thinking	Science/faith essay Graphing assignment
Core competency: Quantitative reasoning	Graphing assignment
PLO #1: Biology content knowledge	GenBio-MAPS assessment
PLO #2: Department participation	Survey of participation
PLO #3: Rationally defensible integration of science and faith	Science/faith essay
PLO #4: Preparation for the future	Survey of participation

Student-led bioethics discussion

The format of this course is largely discussion, and most of these class discussions will be led by you, the students. Each small group of students will be responsible for leading one discussion over the course of the semester. PLNU is blessed with very bright students and, although I will join the discussions as a participant, your thoughts and viewpoints are just as valuable as mine. ***My evaluation will be on quality of participation, preparation, and presentation skills, but will in no way be based on positions that you take during the various discussions. You should feel totally free to speak your mind and back up your opinions with good reasoning.*** My main goal is to challenge you to think critically as you approach scientific issues as they interface with faith and life. ***I may interject with certain scientific facts, offer my own views, or challenge your views, to help strengthen your own understanding, not to force you to believe a certain way.***

Assignments & Grading

Syllabus verification	5 points
Info. Literacy Assignment: Use of sources	25 points
Curriculum vitae (CV)	25 points
Integration of science & faith essay	100 points
Presentation on bioethical issues	
Peer evaluation	5 points
Presentation and class discussion	100 points
Completion of discussion pre-questions (8 weeks @ 10 points each) (vocation readings and bioethical discussion readings/quiz)	80 points
Class participation and attitude	50 points
GenBio-MAPS assessment (achieve at least minimum score for full credit)	25 points
Score on graphing assessment	25 points
Completion of biology department survey	10 points
	TOTAL 450 points

Grade calculation

A 92-100%	A- 90-91%	B+ 88-89%	B 82-87%	B- 80-81%	C+ 78-79%
C 72-77%	C- 70-71%	D+ 68-69%	D 62-67%	D- 60-61%	F 59% or less

All assignments are to be submitted/turned in by the beginning of the class session when they are due—including assignments posted in Canvas. Assignments submitted up to 24 hours late may earn up to 50%, but no credit is available after 24 hours. Incompletes will only be assigned in extremely unusual circumstances.

Content Warning

I acknowledge that each of you comes to PLNU with your own unique life experiences. This contributes to the way you perceive various types of information. All of the class content, including that which may be intellectually or emotionally challenging, has been intentionally curated to achieve the learning goals for this course. The decision to include such material is not taken lightly. These topics include a variety of bioethical situations. If you encounter a topic that is intellectually challenging for you, it can manifest in feelings of discomfort and upset. In response, I encourage you to come talk to me or your friends or family about it. Class topics are discussed for the sole purpose of expanding your intellectual engagement in the area of biology, and I will support you throughout your learning in this course.

Trigger Warning

I acknowledge that each of you comes to PLNU with your own unique life experiences. This contributes to the way you perceive several types of information. In this course, we will cover a variety of topics, some of which you may find triggering. These topics include a variety of bioethical situations. The experience of being triggered versus intellectually challenged are different. The main difference is that an individual must have experienced trauma to experience being triggered, whereas an intellectual challenge has nothing to do with trauma. If you are a trauma survivor and encounter a topic in this class that is triggering for you, you may feel overwhelmed or panicked and find it difficult to concentrate. In response, I encourage you to take the necessary steps for your emotional safety. This may include leaving class while the topic is discussed or talking to a therapist at the Counseling Center.

BIO 4097 Class schedule - Spring 2025

(Details for each week will be posted in Canvas)

DATE	TOPIC	READING/ASSIGNMENT	WHO
Week 1 Jan. 14	Intro to Senior Seminar Choosing teams, topics, dates Getting to know each other	None	Professor
Week 2 Jan. 21	Introduction to C.V., Science/Faith Essay and Oral Presentation	Presentation outline due (work on this in class)	All
Week 3 Jan. 28	GenBio-MAPS assessment	<i>Info. Literacy Assignment:</i> <i>Use of sources due</i>	All
Week 4 Feb. 4	CV & cover letter information PLNU Career Services: LinkedIn & networking (20 min presentation and 40 min working on Linked In accounts and CV) Applying to grad/prof. schools	"What are your strengths?" due <i>Set up LinkedIn account</i>	Professor
Week 5 Feb. 11	CV and cover letter workshop Practice interviews in pairs	CV due	All
Week 6 Feb. 18	Graphing assignment	<i>Science & Faith Essay due</i>	All
Week 7 Feb. 25	Student-led discussion #1	Short reading and discussion Q's	All
Week 8 March 4	Student-led discussion #2	Short reading and discussion Q's	Student presenters
March 11	NO CLASS - SPRING BREAK		
Week 9 March 18	Student-led discussion #3	Short reading and discussion Q's	Student presenters
Week 10 March 25	Student-led discussion #4	Short reading and discussion Q's	Student presenters
Week 11 April 1	Student-led discussion #5	Short reading and discussion Q's	Student presenters
Week 12 April 8	Student-led discussion #6 and Vocation discussion #1	Vocation reading assignment	Student presenters/All
Week 13 April 15	Vocation discussion #2	Vocation reading assignment	All
Week 14 April 22	Vocation discussion #3	Vocation reading assignment	All
Week 15 April 29	No class		
Dec. 16	No final exam		

GENERAL PLNU POLICIES

Spiritual Care

Please be aware PLNU strives to be a place where you grow as whole persons. To this end, we provide resources for our students to encounter God and grow in their Christian faith. If you have questions, a desire to meet with the chaplain or have prayer requests you can contact your professor or the Office of Spiritual Life and Formation.

PLNU Copyright Policy

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

PLNU Academic Honesty Policy

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See Academic Policies for definitions of kinds of academic dishonesty and for further policy information.

PLNU Recording Notification

In order to enhance the learning experience, please be advised that this course may be recorded by the professor for educational purposes, and access to these recordings will be limited to enrolled students and authorized personnel.

Note that all recordings are subject to copyright protection. Any unauthorized distribution or publication of these recordings without written approval from the University (refer to the Dean) is strictly prohibited.

Artificial Intelligence (AI) Policy

Since the writing assignments in this course are for assessment purposes, use of Artificial Intelligence (AI) tools (e.g. ChatGPT, iA Writer, Marmot, Botowski) is not permitted, and use of these tools will be treated as plagiarism.

PLNU Academic Accommodations Policy

PLNU is committed to providing equal opportunity for participation in all its programs, services, and activities in accordance with the Americans with Disabilities Act (ADA). Students with disabilities may request course-related accommodations by contacting the Educational Access Center (EAC), located in the Bond Academic Center (EAC@pointloma.edu or 619-849-2486). Once a student's eligibility for an accommodation has been determined, the EAC will work with the student to create an Accommodation Plan (AP) that outlines allowed accommodations. The EAC makes accommodations available to professors at the student's request. PLNU highly recommends that students speak with their professors during the first two weeks of each semester/term about the implementation of their AP in that particular course. Accommodations are not retroactive so clarifying with the professor at the outset is one of the best ways to promote positive academic outcomes.

Students who need accommodations for a disability should contact the EAC as early as possible (i.e.,

ideally before the beginning of the semester) to assure appropriate accommodations can be provided. It is the student's responsibility to make the first contact with the EAC. Students cannot assume that because they had accommodations in the past, their eligibility at PLNU is automatic. All determinations at PLNU must go through the EAC process. This is to protect the privacy of students with disabilities who may not want to disclose this information and are not asking for any special accommodations.

Language and Belonging

Point Loma Nazarene University faculty are committed to helping create a safe and hospitable learning environment for all students. As Christian scholars we are keenly aware of the power of language and believe in treating others with dignity. As such, it is important that our language be equitable, inclusive, and prejudice free. Inclusive/Bias-free language is the standard outlined by all major academic style guides, including MLA, APA, and Chicago, and it is the expected norm in university-level work. Good writing and speaking do not use unsubstantiated or irrelevant generalizations about personal qualities such as age, disability, economic class, ethnicity, marital status, parentage, political or religious beliefs, race, gender, sex, or sexual orientation. Inclusive language also avoids using stereotypes or terminology that demeans persons or groups based on age, disability, class, ethnicity, gender, race, language, or national origin. Respectful use of language is particularly important when referring to those outside of the religious and lifestyle commitments of those in the PLNU community. By working toward precision and clarity of language, we mark ourselves as serious and respectful scholars, and we model the Christ-like quality of hospitality. If you (or someone you know) have experienced a bias incident regarding language, you can find more information on reporting and resources at www.pointloma.edu/bias.

Sexual Misconduct and Discrimination

In support of a safe learning environment, if you (or someone you know) have experienced any form of sexual discrimination or misconduct, including sexual assault, dating or domestic violence, or stalking, know that accommodations and resources are available through the Title IX Office at pointloma.edu/Title-IX. Please be aware that under Title IX of the Education Amendments of 1972, faculty and staff are required to disclose information about such misconduct to the Title IX Office. If you wish to speak to a confidential employee who does not have this reporting responsibility, you can contact Counseling Services at counselingservices@pointloma.edu or find a list of campus pastors at pointloma.edu/title-ix. If you (or someone you know) have experienced other forms of discrimination or bias, you can find more information on reporting and resources at www.pointloma.edu/bias

PLNU Attendance and Participation Policy

Regular and punctual attendance at all class sessions is considered essential to optimum academic achievement. If the student is absent for more than 10 percent of class sessions, the faculty member will issue a written warning of de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university withdrawal date or, after that date, receive an "F" grade.

Loma Writing Center

The Loma Writing Center exists to help all members of the PLNU community cultivate transferable writing skills to engage their academic, professional, personal, and spiritual communities. We work toward this goal by conducting one-on-one consultation sessions, supporting writing education across the PLNU community, and participating in ongoing writing center research. Getting feedback from the Loma Writing Center while you're in the process of working on an assignment is a great way to improve the quality of your writing and develop as a writer. You are

encouraged to talk with a trained writing consultant about getting started on an assignment, organizing your ideas, finding and citing sources, revising, editing for grammar and polishing final drafts, and more. For information about how to make in-person or online appointments, see [Loma Writing Center webpage](#) or visit the Loma Writer Center on the first floor of the Ryan Library, room 221.

- Appointment Calendar: <https://plnu.mywconline.com/>
- Website: <https://www.pointloma.edu/centers-institutes/loma-writing-center>
- Email: writingcenter@pointloma.edu