

## Point Loma Nazarene University

Mathematical, Information and Computer Science

<b>MTH 444-1</b>	Abstract Algebra I
<b>Class Time</b>	MWF 1:30 pm – 2:40 pm
<b>Location</b>	RS 13
<b>Instructor</b>	Jesús Jiménez, PhD
<b>Office</b>	RS 218
<b>Phone</b>	619-849-2634
<b>Email</b>	jjimenez@pointloma.edu
<b>Office Hours</b>	MWF <b>11:00 am – 12:00 pm</b> TR <b>9:30 am – 10:30 am</b>
<b>Partial Exam Policy</b>	Make-up tests (or the exam) will be given only by arrangement prior to the test (exam) scheduled date with the instructor for reasons of documented emergency.
<b>Final Exam Policy</b>	Successful completion of this class requires taking the final examination <b>on its scheduled day</b> . The final examination schedule is posted on the <a href="#">Class Schedules</a> site. No requests for early examinations or alternative days will be approved.
<b>Late Work Policy</b>	All assignments are to be submitted/turned in by the beginning of the class session when they are due—including assignments posted in Canvas. Incompletes will only be assigned in extremely unusual circumstances.
<b>Textbook</b>	A first course in abstract algebra, 7 <sup>th</sup> edition, by John B. Fraleigh
<b>Prerequisite</b>	MTH232, MTH242 and junior standing
<b>Exam 1</b>	30-Sep
<b>Exam 2</b>	28-Oct
<b>Exam 3</b>	2-Dec
<b>Final Exam</b>	Dec 16, 1:30 pm – 4:00 pm

### 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.

### DEPARTMENT MISSION

The Mathematical, Information, and Computer Sciences department at Point Loma Nazarene University is committed to maintaining a curriculum that provides its students with the tools to be productive, the passion to continue learning, and Christian perspectives to provide a basis for making sound value judgments.

### COURSE DESCRIPTION

A study of groups, rings, fields and related structures, with selected applications.

### LEARNING OUTCOMES

This is a course on theoretical mathematics. The learning outcomes are:

1. Students will be able to write proofs.
2. Students will be able to demonstrate facility with algebraic structures.
3. Students will be able to speak about their work with precision, clarity and organization.
4. Students will be able to write about their work with precision, clarity and organization.
5. Students will collaborate effectively in teams.

**COURSE PHILOSOPHY**

Mathematics requires active participation. Participation means: asking questions, making conjectures and checking them, providing solutions to problems, sharing ideas with classmates. During class time I will participate in the same way. My advantage is that I have seen the material several times.

**CREDIT HOUR**

In the interest of providing sufficient time to accomplish the stated course learning outcomes, this class meets the PLNU credit hour policy for a 4 unit class delivered over 16 weeks. Specific details about how the class meets the credit hour requirements can be provided upon request.

**INCOMPLETE AND LATE ASSIGNMENTS**

All assignments are to be submitted/turned in by the beginning of the class session when they are due—including assignments posted in Canvas. Incompletes will only be assigned in extremely unusual circumstances.

**ATTENDANCE**

Attendance is expected at each class session. In the event of an absence you are responsible for the material covered in class and the assignments given that day.

Regular and punctual attendance at all classes in which a student is registered is considered essential to optimum academic achievement. Therefore, regular attendance and participation in each course are minimal requirements to be met. There are no allowed or excused absences except as approved in writing by the Provost for specific students participating in certain university-sanctioned activities. Excused absences still count toward the 10%-20% limits, but allow students to make up work, quizzes, or tests missed as a result of a university-sanctioned activity. Activities of a unique nature, such as labs or other activities identified clearly on the syllabus, cannot be made up except in rare instances when instructors have given advanced, written approval for doing so. Whenever the number of accumulated absences in a class, for any cause, exceeds ten (10) percent of the total number of class meetings, the faculty member should send an e-mail to the student and the Vice Provost for Academic Administration (VPAA) warning of attendance jeopardy. If more than twenty (20) percent of the total number of class meetings is reported as missed, the faculty member or VPAA may initiate the student's de-enrollment from the course without further advanced notice to the student. If the date of de-enrollment is past the last date to withdraw from a class, the student will be assigned a grade of W or WF consistent with university policy in the Grading section of the catalog. There are no refunds for courses where a de-enrollment was processed. For more details see the PLNU

catalog: [http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Class\\_Attendance](http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Class_Attendance)

**CLASS ENROLLMENT**

It is the student's responsibility to maintain his/her class schedule. Should the need arise to drop this course (personal emergencies, poor performance, etc.), the student has the responsibility to follow through (provided the drop date meets the stated calendar deadline established by the university), not the instructor. Simply ceasing to attend this course or failing to follow through to arrange for a change of registration (drop/add) may easily result in a grade of F on the official transcript.

**ACADEMIC ACCOMADATIONS**

While all students are expected to meet the minimum academic standards for completion of their courses as established by the instructors, students with special needs may require academic accommodations. At Point Loma Nazarene University, students requesting academic accommodations must file documentation with the Disability Resource Center (DRC), located in the Bond Academic Center. Students can also reach the Disability Resource Center by phone at 619-849-2486 or by e-mail at [DRC@pointloma.edu](mailto:DRC@pointloma.edu). Once the student files documentation, the Disability Resource Center contacts the student's instructors and provides written recommendations for reasonable and appropriate accommodations to meet the individual needs of the student. This policy assists the university in its commitment to full compliance with Section 504 of the Rehabilitation Act of 1973, the Americans with Disabilities (ADA) Act of 1990, and ADA Amendments Act of 2008, all of which prohibit discrimination against students with special needs and guarantees all qualified students equal access to the benefits of PLNU programs and activities. For more details see the PLNU

catalog: [http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Academic\\_Accommodations](http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Academic_Accommodations)

Students with learning disabilities who may need accommodations should discuss options with the instructor during the first two weeks of class.

### **ACADEMIC HONESTY**

The Point Loma Nazarene University community holds the highest standards of honesty and integrity in all aspects of university life. Any violation of the university's commitment is a serious affront to the very nature of Point Loma's mission and purpose. Violations of academic honesty include cheating, plagiarism, falsification, aiding academic dishonesty, and malicious interference. The details of PLNU's meaning of each of these words can be found in the PLNU catalog at: [http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Academic\\_Honesty](http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Academic_Honesty)

A student remains responsible for the academic honesty of work submitted in PLNU courses and the consequences of academic dishonesty beyond receipt of the final grade in the class and beyond the awarding of the diploma. Ignorance of these catalog policies will not be considered a valid excuse or defense. Students may not withdraw from a course as a response to a consequence.

A student who is caught cheating on any item of work will receive a zero on that item and may receive an "F" for the semester. See the PLNU Catalog for a further explanation of the PLNU procedures for academic dishonesty ([http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Academic\\_Honesty](http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Academic_Honesty)).

### **FINAL EXAM DATE AND TIME**

The final exam date and time is set by the university at the beginning of the semester and may not be changed by the instructor. Only in the case that a student is required to take three exams during the same day of finals week is an instructor authorized to change the exam date and time for that particular student.

### **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.

### **CREDIT HOUR**

In the interest of providing sufficient time to accomplish the stated course learning outcomes, this class meets the PLNU credit hour policy for a 4 unit class delivered over 16 weeks. Specific details about how the class meets the credit hour requirements can be provided upon request.

### **EDUCATION RECORDS (FERPA) AND DIRECTORY INFORMATION**

The Family Educational Rights and Privacy Act (FERPA) of 1974 as amended affords students certain rights with respect to their education records. These include: 1) the right to inspect and review the student's education records within 45 days of the day the university receives a request for access, 2) the right to request the amendment of the student's education records that the student believes are inaccurate or misleading, 3) the right to consent to disclosures of personally identifiable information contained in the student's education records, and 4) the right to file a complaint with the U.S. Department of Education concerning alleged failures by Point Loma to comply with the requirements of FERPA.

FERPA has specifically identified certain information called directory information that may be disclosed without student consent. Although directory information may be disclosed without student consent, PLNU is not required to release directory information.

The university has defined directory information as name, address (including electronic mail), telephone number, date and place of birth, major field of study, dates of attendance, enrollment status, degrees, honors and awards received, participation in officially recognized activities and sports, weight and height of members of athletic teams, degree candidacy, and the most recent previous educational agency or institution attended. This information may be provided, upon review by the Vice Provost for Academic Administration, as public information or to individuals who demonstrate a

valid need to contact students. Photographs of students may also be used in various university publications or on the university website. Students who prefer that their photograph not be used, must inform the Office of Marketing and Creative Services of their request prior to the second Monday of each semester.

The university may disclose education records to college officials with legitimate educational interests. A college official is a person employed by the university; a member of the Board of Trustees; or an individual serving on a committee, such as disciplinary or grievance committees. A college official has a legitimate educational interest if the information aids the official in fulfilling professional functions. PLNU also includes among college officials a student appointed to an official committee or assisting another official in performing tasks and outside service providers who perform an institutional service of function such as attorneys, auditors, and the National Student Clearinghouse. The university may also disclose education records to post-secondary institutions in which a student is seeking or intending to enroll, or is already attending if the disclosure is for purposes related to the student's enrollment or transfer.

Questions relative to FERPA policies should be referred to the Office of the Vice Provost for Academic Administration or may be referenced at FERPA.

([http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Education Records FERPA and Directory Information](http://catalog.pointloma.edu/content.php?catoid=18&navoid=1278#Education_Records_FERPA_and_Directory_Information))

## GRADING

Grades for the course will be based on homework (25%), three exams (15% each; total of 45%), and a final exam (30%).

### HOMEWORK (25%)

Homework due dates will be determined during class meetings. A homework assignment is late if it is not received at the start of class on the due date. No late homework will be accepted; however the two lowest homework scores will be dropped. Please be sure that your homework is stapled together and the problems are in order. Homework will be scored on a combination of completeness and correctness. A random selection (the same for all people) of the problems will be graded on any homework assignment.

### TESTS (15% each) AND FINAL EXAM (30%)

Tests and the Final Exam will include problems and questions over material assigned in the text, readings and handouts, as well as material presented in class.

No examination shall be missed without prior consent by me or a well documented emergency beyond your control. A score of zero will be assigned for an examination that is missed without prior consent or a well documented emergency beyond your control. The examination schedule is included in the daily schedule. I do not intend to accept excuses such as poor communication with parents, benefactors, sport team sponsors and/or travel agents.

**The Final Exam is COMPREHENSIVE.**  
**December 16 (Friday) 2016, 1:30 pm - 4:00 pm**

## GRADING SCALE

Course grades will be assigned according to the following scale:

Grading Scale in percentages				
	A	B	C	D
+		(87.5, 90)	(77.5, 80)	(67.5, 70)
	[92.5, 100]	[82.5, 87.5]	[72.5, 77.5]	[62.5, 67.5]
-	[90, 92.5)	[80, 82.5)	[70, 72.5)	[60, 62.5)

## CELL PHONES

Turn off any cell phone, pager or things that are distracting while you are in class. Also, do not text or work on other classes while in class (to do so is disrespectful to me and your classmates) and it is not the best use of class time.

**GENERAL ADVICE**

1. The key to success in this class is to attend lectures regularly and do your homework.
2. Read the textbook in advance. Try to stay ahead of the instructor.
3. You learn mathematics by doing it yourself.
4. You should expect to spend approximately two hours outside of class for every one hour in class working on homework and going over concepts.
5. When doing homework, please note it is normal to not be able to do every problem correct on the first attempt. Do not be discouraged, instead seek help.

**SOURCES OF HELP**

- The instructor. If you have questions, ask me. See office hours.
- Other classmates. Form study groups. Work together. But write your own solutions!!

**TENTATIVE SCHEDULE**

While topic order may change- the test dates will not.

**Daily Schedule**

Month	Week	Monday	Wednesday	Friday
August	Week 1	<b>29</b> Intro and Section 0	<b>31</b> Section 0 and I.1	<b>2</b> I.1
September	Week 2	<b>5</b> <b>Labor Day (No classes)</b>	<b>7</b> I.2	<b>9</b> I.2 and I.3
	Week 3	<b>12</b> I.3	<b>14</b> I.4	<b>16</b> I.5
	Week 4	<b>19</b> I.6	<b>21</b> I.6 and I.7	<b>23</b> I.7
	Week 5	<b>26</b> II.8	<b>28</b> II.8	<b>30</b> <b>Exam 1</b>
October	Week 6	<b>3</b> II.9	<b>5</b> II.9 and II.10	<b>7</b> II.10
	Week 7	<b>10</b> II.11	<b>12</b> III.13	<b>14</b> III.13 and III.14
	Week 8	<b>17</b> III.14	<b>19</b> III.15	<b>21</b> <b>Fall Break (No classes)</b>
	Week 9	<b>24</b> III.15	<b>26</b> IV.18	<b>28</b> <b>Exam 2</b>
	Week 10	<b>31</b> IV.18 and II.19	<b>2</b> IV.19 and IV.20	<b>4</b> IV.20 and IV.21
November	Week 11	<b>7</b> IV.21	<b>9</b> IV.22	<b>11</b> IV.23
	Week 12	<b>14</b> IV.23 and V.26	<b>16</b> V.26	<b>18</b> V.26 and V.27
	Week 13	<b>21</b> V.27 and VI.29	<b>23</b> <b>Thanksgiving Break</b>	<b>25</b> <b>Thanksgiving Break</b>
	Week 14	<b>28</b> VI.29	<b>30</b> VI.30 and VI.31	<b>2</b> <b>Exam 3</b>
December	Week 15	<b>5</b> VI.31	<b>7</b> VI.32	<b>9</b> VI.32 and VI.33
	Week 16	<b>12</b>	<b>14</b>	<b>16</b> <b>Final Exam (1:30 pm - 4:00 pm)</b>

**Homework**

Section	Problems	Section	Problems
<b>0</b>	25,26,29,30,36 a	<b>III.15</b>	3-6,14,27,30,31,34-36,40-42
<b>I.1</b>	4-10,13,14,19,31,34,35,37	<b>IV.18</b>	1-6,10-12,16-19,27,28,38,41,44,46,49
<b>I.2</b>	1-4,8,9,13,14,15,19,20,21,24,36,37	<b>IV.19</b>	1-4,8-10,29
<b>I.3</b>	1, 3,4,6,8,10,12,13,21,22,26,27	<b>IV.20</b>	1-10,16,17,27
<b>I.4</b>	2,4,7,8,10, 22,23,29,32,40,41	<b>IV.21</b>	1,2,4,12,17
<b>I.5</b>	4,12,13,22,26,27,30,31,36,37,39,41,43,47,52-54	<b>IV.22</b>	1-16,24,25,27
<b>I.6</b>	14-16,22,23,30,32,33-37,44-46,56	<b>IV.23</b>	1-4,16,17,18-22,28,29,34,35,36
<b>I.7</b>	2-6	<b>V.26</b>	3,9,12,14,19,20,22,29-31,34
<b>II.8</b>	1-9,11,12,16,17,21,24,25,44,48-50	<b>V.27</b>	1-14,18,19,24,28
<b>II.9</b>	2-4,10-13,36,37	<b>VI.29</b>	1,2,5,7,8,11-14,17,18,27,30,36,37
<b>II.10</b>	2-5, 26-29,39,43,45,46	<b>VI.30</b>	1,4-8,16-20,24-27
<b>II.11</b>	1-6,14,15,16,21,22,24,47,53	<b>VI.31</b>	1-12,23,25,26,27,29-31
<b>III.13</b>	1-5,18-21,33,34,42,43,47-51	<b>VI.32</b>	4-6,8
<b>III.14</b>	1-5,10-12,21-24,27,30,31,34,35,37	<b>VI.33</b>	1-6,10