**Course Syllabus**

|  |  |
| --- | --- |
| Instructor: | Dr. David Brown |
| Office: | Al 74 |
| Office Hours: | MWTHF 10:00 am;T 2:00 pm |
| Email: | ddbrown@bju.edu |
| Telephone: | 8065 |

**Textbooks:***Introduction to Topology by Bert Mendelson 3rd Ed.; Counterexamples in Topology by Steen and Seebach*

**Calculator Requirements:**A Ti-89 or Ti N-Spire

**Catalog Description:***An axiomatic development of point-set topology; connectivity, compactness, metrization, separability and topological equivalence.*

**BIBLICAL MANDATE FOR THIS COURSE**

The source of wisdom and knowledge is the Lord and a keen mind is a gift from God. Mathematical study should reflect the greatness of God and increase Christlikeness in the believer (Colossians 1:17 and Philippians 2:5). God has given man the capacity to reason mathematically and expects a Christian to be able to reason logically (Isaiah 1:18). The study of mathematics develops the God-given ability to reason. A Christian needs to discern truth and all ideas should be filtered though a biblical worldview.  Also, mathematics is the study of the underlying structure of the universe and its intelligent design. Mathematics is an avenue of studying the God-created universe in its complexity, harmony, and precision. In this way the Christian can fulfill his God-given mandate found in Genesis 3:28 to exercise dominion over the earth.

The study of mathematics from a Christian perspective helps a person know God better and imitate Him more closely. The student sees the consistency of God in the consistency of His universe. Because of this consistency, he is able to model a physical law and study it through mathematics. The study of mathematics also helps the Christian to develop Christlike character traits such as diligence, honesty, precision, perseverance, and humility.

**Context:**  This course supports the following institutional goals (IG), the goals of the Bible and liberal arts core (BL), and the Division of Mathematical Science goals (MS)

                IG 3:    To develop in students Christ-like character through disciplined, Spirit-filled living.

IG 4:    To direct students toward a biblical life view that integrates God’s Truth into practical Christian living.

IG 5:    To prepare students to excel intellectually and vocationally by offering diverse academic programs rooted in biblical truth and centered on a liberal arts core.

BL 3c: Will equip students to understand the physical world as God’s creation, as a stewardship given to man, and as the physical expression of His glory

BL 4:   Demonstrate critical thinking in analyzing, evaluating, and synthesizing information and ideas.

BL 5:   Develop solutions to problems, working independently and with others, through critical and creative thinking.

MS 3   Provide the student a platform for continued learning and development of his God-Given abilities.

MM 4. Provide a solid foundations for graduate studies in mathematics.

**Course Goals**

A.        To develop a Christian perspective of Calculus and related scientific endeavor

B.        To develop mathematical maturity and independent thinking

C.        To develop a greater appreciation for the beauty and power of Abstraction

D.        To develop a greater interest in exploring mathematical ideas independent of the teacher

**(Tentative) Schedule:**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Mon** | **Wed** | **Fri** |
| **Week #1** |   | 1.1-1.2 | 1.3-1.4 |
| **Week #2** | 1.5-1.6 | 1.7 | 1.8 |
| **Week #3** | 1.9 | 1.10 | Test 1 |
| **Week #4** | 2.1 | 2.2 | 2.3 |
| **Week #5** | 2.4 | 2.5 | 2.6 |
| **Week #6** | 2.7 | 2.8 | ??? |
| **Week #7** | Test 2 | 3.1 | 3.2-3.3 |
| **Week #8** | 3.3 | 3.4-5 | 3.6 |
| **Week #9** | 3.7 | 3.8 | 3.9 |
| **Week #10** | ??? | Test 3 | 4.1 |
| **Week #11** | 4.2 | 4.3 | 4.4 |
| **Week #12** | 4.5 | 4.6 | ??? |
| **Week #13** | Test 4 | Thanksgiving Break |
| **Week #14** | Break | 5.2 | 5.3 |
| **Week #15** | 5.4 | 5.5 | 5.6 |

**(Tentative) Homework Assignment**

Chapter 1

1.2: 1, 2, 3
1.3: 1, 2
1.4: 1, 3, 4, 5
1.5: 1, 3
1.6: 1b, 1d, 3a, 4b, 4c
1.7: 1, 2, 3
1.8: 4
1.10: 1, 2

Chapter 2

2.2: 1, 5, 6, 8
2.3: 1, 3, 4
2.4: 1, 2, 3, 4, 8,
2.5: 3, 4, 6, 9
2.6: 1, 5, 6
2.7: 1, 2, 5, 6, 7

Chapter 3

3.2: 5
3.4: 1, 2, 3, 5, 8, 9, 10
3.5: 1
3.6: 2, 3, 4
3.7: 1

Chapter 4

4.2: 1, 2, 4
4.4: 1, 3
4.5: 1, 2, 4

The homework assigned for the material covered by a test will be handed in at the beginning of the period on the day you are tested over the material. Be sure to adhere to the following:

* Homework must be handed in on 8½ by 11 inch paper in a notebook or folder.
* Homework must be your own work, but you are encouraged to work together to figure out how to do it. It is to be a learning experience.
* Homework must be neat and well organized.You should use proper notation and complete sentences. Yes and no answers by themselves are never appropriate. In the past, some students only wrote the answers found in the back of the book. They didn't get any credit.

**Copyright Policy**

Copyright-2012  David D. Brown as to this syllabus and all lectures. Students are prohibited from selling (or being paid for taking) notes during the course to, or by any person, or commercial firm, without the express written permission of the professor teaching the course.

**General Policies**

* Calculator Requirements: TI-89 Calculator
* At least a grade of C in *Prerequisites*

**Grading Scale**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Percent** | **Grade** |   | **Percent** | **Grade** |
| 93- | A | 77-79 | C+ |
| 90-92 | A- | 73-76 | C |
| 87-89 | B+ | 70-72 | C- |
| 82-86 | B | 62-69 | D |
| 80-82 | B- | 60-62 | D- |

**Late Work**

There are very few acceptable excuses for late work. In case of missing class because of illness, the exam will be placed in the testing service in Mack Library. If possible, you should make up the test before the next scheduled class meeting. If this is not possible discuss with me the date of make up on your first day back in class. General rule -- you have one day to make up work for each class day missed. All work must be made up within one week from returning. For non-emergency cuts you must have all work done in advance. Cuts end on the day they end. Therefore if there is homework, a quiz, or a test the day the student returns, he is expected to be prepared to do it. Non-cuts absences: Any non-cuts absence, other than illness and other emergencies, from class must be approved by your dean - in writing - one week prior to the day you will be gone.

**Cheating**

Cheating is defined as any use of unauthorized helps. In today's age of technology, this includes getting unapproved help from a source on the internet and/or using your calculator to store formulas or information that you are to know from memory. If you have a question about any source you are considering using, please gain teacher approval before using it. The presence of any material on your desk containing formulas, notes, etc. (except for those allowed by the instructor) while taking a test, will be construed as cheating and will be dealt with as such. Cheating on a test will result in a zero on the test plus any penalties imposed by the discipline committee. You may not work together on take-home questions. You may work together on your homework.