UTRGV SYLLABUS
MATH 3350 -03 INTRODUCTION TO MATH PROOFS SPRING 2018

UTRGV Course # Math3350
Term: Spring 2018
Meeting location & times: LHSB 2.312 MW 1:20PM -1:50PM
Office location & hours LHSB 2.508 MW 3 PM -3:50PM (no need to make an appointment, I will be there unless I make announcement of special circumstances); MW 11:30 AM -12:15 PM (by appointment only)

Textbook and/or Resource Material
Textbook: Ted Sundstrom “Mathematical Reasoning – Writing and Proof”
Free at https://www.tedsundstrom.com/mathreasoning

Course Description and Prerequisites
This course will prepare the student for advanced mathematics courses that require the writing of proofs. It reviews various elementary proof methods and the logical structure underlying them. It examines the formal definitions and basic properties of the mathematical structures that one encounters when constructing proofs, and it recounts famous theorems concerning these structures that every mathematician should know. Students are expected to construct non-routine mathematical proofs independently and to present their work in written form clearly and precisely. Substantial written work is required. Prerequisites: MATH 2318 with a grade of ‘C’ or better.
3.000 Credit hours
3.000 Lecture hours

Learning Objectives/Outcomes for the Course
Upon completion of the course students:
1) Will be able to decide about the correctness of the presented mathematical proof.
2) Will be able to present a mathematical proof in oral or written form
3) Will be able to use correctly logical connectives and quantifiers
4) Will be able to construct proofs of simple mathematical statements

Learning Objectives for Core Curriculum Requirements
The course addresses the following THECB outcomes: Critical Thinking Skills and Communication Skills.

Grading Policies
The course grade has the following components:
10 % In class quiz and/or in class solution of one of the homework problem
20 % Written homework
10 % Classroom presentations
60 % Four proctored tests
UTRGV’s grading policy is to use straight letter grades (A, B, C, D, or F).

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>90% and above</td>
</tr>
<tr>
<td>B</td>
<td>80% - 89%</td>
</tr>
<tr>
<td>C</td>
<td>70% - 79%</td>
</tr>
<tr>
<td>D</td>
<td>60% - 69%</td>
</tr>
<tr>
<td>F</td>
<td>Below 60%</td>
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ABSENCES AND MAKE-UP WORK
Attendance is mandatory please contact instructor for special arrangements beforehand if absent. If you know that you will have to miss a test, please see me ahead of time and make arrangements to take it early.

Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences.

NO make-up work

Calendar of Activities
The UTRGV academic calendar can be found at


Tentative calendar of course activities
There are two homework assigned every week (exception week 1, weeks when we’ll have test, and weeks prior the test).
All out midterm Tests are on Mondays, the previous week Monday’s assignment is due the same week on Wednesday.
A homework that is assigned on Monday is Due Wednesday that same week, the homework that is assigned on Wednesday is due next week Monday.

<table>
<thead>
<tr>
<th>MATH 3350-03</th>
<th>Intro to Math Proof</th>
<th>Section from the book: Ted Sundstrom “Mathematical Reasoning – Writing and Proof”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Week 1</td>
<td>01/16 – 01/21</td>
<td>1.1 Homework 1 Due Wednesday</td>
</tr>
<tr>
<td>Week 2</td>
<td>01/22 – 01/28</td>
<td>1.2 &amp; 2.1; HW 2, HW3; READING AND WATCHING ASSIGNMENTS</td>
</tr>
<tr>
<td>Week 3</td>
<td>01/29 – 02/04</td>
<td>2.2 &amp; 2.3; HW 4, HW5; READING AND WATCHING ASSIGNMENTS</td>
</tr>
<tr>
<td>Week 4</td>
<td>02/05 – 02/11</td>
<td>2.4 &amp; 2.5,1.3; HW 6, HW7</td>
</tr>
<tr>
<td>Week 5</td>
<td>02/12 – 02/18</td>
<td>TEST #1 &amp; 3.1, 3.2; HW 8 (Due Wednesday 02/07)</td>
</tr>
<tr>
<td>Week 6</td>
<td>02/19 – 02/25</td>
<td>3.3, 3.4 &amp; 3.5,4.1; HW 9, HW10; READING AND WATCHING ASSIGNMENTS</td>
</tr>
<tr>
<td>Week 7</td>
<td>02/26 – 03/04</td>
<td>4.2, 4.3 &amp; 3.6, 3.7, 4.4; HW 11, HW12; READING AND WATCHING ASSIGNMENTS</td>
</tr>
<tr>
<td>Week 8</td>
<td>03/05 – 03/11</td>
<td>TEST #2 &amp; 5.1; HW13 READING AND WATCHING ASSIGNMENTS Due Monday, March 19</td>
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<td></td>
<td>03/12 – 03/18</td>
<td>Spring Break</td>
</tr>
<tr>
<td>Week 9</td>
<td>03/19 – 03/25</td>
<td>5.2, &amp; 5.3, 5.4; HW 14, HW15; READING AND WATCHING ASSIGNMENTS</td>
</tr>
<tr>
<td>Week 10</td>
<td>03/26 – 04/01</td>
<td>5.5, 6.1; HW16 (Due Wednesday)&amp;,5.6 6.2, HW17 (Due Wednesday) WATCHING ASSIGNMENTS; HW18 (Due April 4)</td>
</tr>
<tr>
<td>Week 11</td>
<td>04/02 – 04/08</td>
<td>TEST #3, 6.3, 6.4; HW19; READING AND WATCHING ASSIGNMENT</td>
</tr>
<tr>
<td>Week 12</td>
<td>04/09 – 04/15</td>
<td>6.5 &amp; 6.6; HW20;HW21; READING AND WATCHING ASSIGNMENT</td>
</tr>
<tr>
<td>Week 13</td>
<td>04/16 – 04/22</td>
<td>7.1, 7.2 &amp; 7.3,7.4; HW22;HW23; READING AND WATCHING ASSIGNMENT</td>
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<tr>
<td>Week 14</td>
<td>04/23 – 04/29</td>
<td>9.1 &amp; 9.2 TBD</td>
</tr>
<tr>
<td>Week 15</td>
<td>04/30 – 05/02</td>
<td>9.3 &amp; 6.7, 7.5, 9.4 TBD</td>
</tr>
<tr>
<td>Final</td>
<td>05/03</td>
<td>Study Day</td>
</tr>
<tr>
<td>Final Exam</td>
<td>According to schedule</td>
<td>Final Exam = Test # 4</td>
</tr>
</tbody>
</table>

HOMEWORK ASSIGNMENTS
I. The score for 20 assignments will be recorded
II. I expect you to watch screencast before we discuss material in class and try to do homework problems
III. For most class periods it will be a quiz on watched video!!! (With immediate feedback).
IV. READING ASSIGNMENT: For each class period you read the same section of the book from which exercises are assigned. Say a homework assignment says “Exercises for Section 1.1:...”. This statement automatically implies that you read Section 1.1. along with doing exercise’s for Section 1.1 (in assumption that watching screencast for the section 1.1 is a part of the previous assignment)

Homework 1
Read: Section 1.1 due Monday January 22
1. Exercises for Section 1.1, p. 12: 1, 2, 3 (due Wednesday January 24)
Due Monday January 24:
Watch Screencast:
Screencasts for Section 1.1: 1.1.1-1.1.5
Screencasts for Section 1.2: 1.2.1, 1.2.1b, 1.2.2, 1.2.3, 1.2.4

**Homework 2**
1. Exercises for Section 1.2, pages 26-27: 1b, 2a, 2b, 3c, 4b, 4c, 5a
2. Screencasts: 2.1.1-2.1.8

**Homework 3**
1. Exercises for Section 2.1, pages 40-42: 3a, 3c, 4a, 4b, 6a, 6b, 6c,
2. Screencasts: 2.2.1-2.2.4

**Homework 4**
1. Exercises for Section 2.2, pages 49-50: 3a, 3b, 3c, 4c, 4b, 5a, 5b, 9a, 9b
2. Screencasts: 2.3.1-2.3.3 (Sections 2.3)

**Homework 5**
1. Exercises for Section 2.3, pages 62: 4c, 4d, 5b, 6a, 6c, 6f
2. Screencasts: 2.4.1, 2.4.2 (Sections 2.4)

**Homework 6**
1. Exercises for Section 2.4, pages 74-76: 1, 3a, 3c, 3e, 4a, 9a, 10a

**Homework 7** (no formal score is recorded for this assignment)
Review homework problems, screen casts, definitions and theorem statements for the Test 1
Be advised, it will be a quiz on the material of Sections 3.1 & 3.2
1. Screencasts: 3.1.1 - 3.1.5 (Sections 3.1); (Due Wednesday 02/14/2018 after Test 1)
2. Screencast: 3.2.1-3.2.5 (Section 3.2); (Due Wednesday 02/14/2018 after Test 1)

**Homework 8**
1. Exercises for Section 3.2: 2, 4, 6, 9, 10
2. Screencasts: 3.3.1-3.3.4 (Section 3.3) and Screencasts: 3.4.1-3.4.4 (Section 3.4)

**Homework 9**
1. Exercises for Section 3.3: 3, 4, 5, 6a, 6b
2. Exercises for Section 3.4: 2, 6a, 6b, 7, 8
3. Screencasts: 3.5.1-3.5.4 (Sections 3.5) and Screencasts: 4.1.1- 4.1.6 (Sections 4.1)

**Homework 10**
1. Exercises for Section 3.5: 4, 5, 8, 17a, 20a
2. Exercises for Section 4.1: 3b, 3c, 6a, 7, 8a, 8b, 9, 10
2. Screencasts: 4.2.1-4.2.3 (Sections 4.2) and 4.3.1-4.3.3 (Section 4.3)

**Homework 11**
1. Exercises for Section 4.3: 1, 6, 8
2. Exercises for Section 4.2: 1b, 2, 5, 7, 8, 12, 16

**Homework 12** (no formal score is recorded for this assignment)
Review homework problems, screen casts, definitions and theorem statements for the Test 2 (sections 3.6, 3.7, 4.4)
Screencasts: 5.1.1 - 5.1.4 (Section 5.1). Due Wednesday March 7
Be advised, it will be a quiz on the material of Section 5.1 (The first day after spring break)

**Homework 13** (Due Monday March 19)
1. Exercises for Section 5.1: 5 (a)-(d), 6 (a), 7 (a)-(n), 9(b), 10(a)
2. Screencasts: 5.2.1-5.2.3 (Section 5.2)
Homework 14
1. Exercises for Section 5.2: 2 (a),(b), 4 (a),(b),(c), 7 (a)-(f), 12(a), 15(a),(b)
2. Screencasts: 5.3.1-5.3.3 (Section 5.3)
3. Screencasts: 5.4.1-5.4.2 (Section 5.4)

Homework 15
1. Exercises for Section 5.3: 3, 4 (a)-(c), 5, 6(b), 7 (a)-(b), 9, 10
2. Exercises for Sections 5.4: 1 (b, d, f, h), 2, 4, 7, 8
3. Review section 5.5 (unfortunately not screencasts)
4. Screencasts: 6.1.1-6.1.8 (Section 6.1.)

Homework 16
1. Exercises for Sections 5.5: 1(b, c, e, f); 2(a)-(h); 3 (a, b); 4a
2. Exercises for Sections 6.1: 2 (a)-(d); 4 (a)-(d); 5 (a,e); 6(a)-(g); 7(a,b,c)
3. Screencast: 6.2.1-6.2.2 (Section 6.2)

Homework 17 Due Monday April 2 (no formal score is recorded for this assignment)
Review homework problems, screen casts, definitions and theorem statements for the Test 3 (section 5.6)

Homework 18 (Due Wednesday April 4)
1. Exercises for Section 6.2: 3,4,5
2. Screencast: 6.3.1-6.3.4 (Section 6.3) and 6.4.1, 6.4.2 (Section 6.4.)

Homework 19
1. Exercises for Sections 6.3: 1, 2b, 3(c)-(g); 4c, d; 5; 6, 7; 9
2. Exercises for Sections 6.4: 2; 5 a, b; 7(a)-(h)
3. Screencast 6.5.1-6.5.4 (Section 6.5)

Homework 20
1. Exercises for Sections 6.5:1, 2(a)-(d); 3(a)-(c); 7(a,b)
2. Review section 6. 6

Homework 21
1. Exercises for Sections 6.6:1, 2, 4, 5
2. Screencasts: 7.1.1, 7.1.2 (Section 7.1), 7.2.1, 7.2.2 (Section 7.2)

Homework 22
1. Exercises for Sections 7.1: 2, 3, 4, 6
2. Exercises for Sections 7.2: 2, 3, 4, 5, 6
3. Screencasts: 7.3.1-7.3.3 (Section 7.3)
4. Screencasts: 7.4.1-7.4.4 (Section 7.4)

Homework 23
1. Exercises for Sections 7.3: 1, 2, 5, 9
2. Exercises for Sections 7.4: 1, 2 (a,e,g); 3, 5

Homework 24
1. Exercise for Section 9.1: TBD;
2. Presentations

Homework 25
1. Exercise for Section 9.2: TBD
2. Presentations
Homework 26
1. Exercise for Section 9.3: TBD
2. Presentations

Calendar of Activities
Include in this section a table or list that provides information for students regarding important dates, assignments or activities. The UTRGV academic calendar can be found at https://my.utrgv.edu/home at the bottom of the screen, prior to login. Some important dates for spring 2018 include:

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 16</td>
<td>First day of classes</td>
</tr>
<tr>
<td>January 19</td>
<td>Last day to add a course or register for spring 2018</td>
</tr>
<tr>
<td>March 12 – 17</td>
<td>SPRING BREAK – NO classes</td>
</tr>
<tr>
<td>March 30 – 31</td>
<td>EASTER HOLIDAY – NO classes</td>
</tr>
<tr>
<td>April 12</td>
<td>Last day to drop a course; will count toward the 6-drop rule</td>
</tr>
<tr>
<td>May 2</td>
<td>Last day of classes</td>
</tr>
<tr>
<td>May 3</td>
<td>Study Day – NO class</td>
</tr>
<tr>
<td>May 4 – 10</td>
<td>Spring 2018 Final Exams</td>
</tr>
<tr>
<td>May 11 - 12</td>
<td>Commencement Ceremonies</td>
</tr>
</tbody>
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Other Course Information
In this section, please provide any other information that is pertinent to your course and your expectations for students.

UTRGV Policy Statements [next page]
The UTRGV disability accommodation, mandatory course evaluation statement and sexual harassment statement are required on all syllabi. Additional policy statements are optional, such as those covering attendance, academic integrity, and course drop policies.

STUDENTS WITH DISABILITIES: Required on all syllabi. Do not modify.
Students with a documented disability (physical, psychological, learning, or other disability which affects academic performance) who would like to receive academic accommodations should contact Student Accessibility Services (SAS) as soon as possible to schedule an appointment to initiate services. Accommodations can be arranged through SAS at any time, but are not retroactive. Students who suffer a broken bone, severe injury or undergo surgery during the semester are eligible for temporary services. Brownsville Campus: Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at ability@utrgv.edu. Edinburg Campus: Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at ability@utrgv.edu.

MANDATORY COURSE EVALUATION PERIOD: Required on all syllabi. Do not modify.
Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (https://my.utrgv.edu); you will be contacted through email with further instructions. Students who complete their evaluations will have priority access to their grades. Online evaluations will be available:

<table>
<thead>
<tr>
<th>Module</th>
<th>Evaluation Dates</th>
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</thead>
<tbody>
<tr>
<td>Spring 2018 Module 1</td>
<td>February 14 – February 20</td>
</tr>
<tr>
<td>Spring 2018 Module 2</td>
<td>April 11 – April 17</td>
</tr>
<tr>
<td>Spring 2018 (full semester)</td>
<td>April 11 – May 2</td>
</tr>
</tbody>
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ATTENDANCE: Recommended on all syllabi; may be modified by the instructor as long as it is not inconsistent with UTRGV policy.
Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV’s attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.
**SCHOLASTIC INTEGRITY:** Recommended on all syllabi.
As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism (including self-plagiarism), and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to the Dean of Students.

**SEXUAL HARASSMENT, DISCRIMINATION, and VIOLENCE:** Required on all syllabi. Do not modify.
In accordance with UT System regulations, your instructor is a “Responsible Employee” for reporting purposes under Title IX regulations and so must report any instance, occurring during a student’s time in college, of sexual assault, stalking, dating violence, domestic violence, or sexual harassment about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at www.utrgv.edu/equity, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect that is free from sexual misconduct and discrimination.

**COURSE DROPS:** Recommended on all syllabi; may be modified by the instructor as long as it is not inconsistent with UTRGV policy.
According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the “3-peat rule” and the “6-drop” rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.

**STUDENT SERVICES:** Recommended on all syllabi.
Students who demonstrate financial need have a variety of options when it comes to paying for college costs, such as scholarships, grants, loans and work-study. Students should visit the Students Services Center (U Central) for additional information. U Central is located in BMAIN 1.100 (Brownsville) or ESSBL 1.145 (Edinburg) or can be reached by email (ucentral@utrgv.edu) or telephone: (888) 882-4026. In addition to financial aid, U Central can assist students with registration and admissions.

Students seeking academic help in their studies can use university resources in addition to an instructor’s office hours. University Resources include the Learning Center, Writing Center, Advising Center and Career Center. The centers provide services such as tutoring, writing help, critical thinking, study skills, degree planning, and student employment. Locations are:

- **Learning center:** BSTUN 2.10 (Brownsville) or ELCTR 100 (Edinburg)
- **Writing center:** BLIBR 3.206 (Brownsville) or ESTAC 3.119 (Edinburg)
- **Advising center:** BMAIN 1.400 (Brownsville) or ESWKH 101 (Edinburg)
- **Career center:** BCRTZ 129 (Brownsville) or ESSBL 2.101 (Edinburg)