

## **MAT185 Quantitative Reasoning**

### **(3 credit hours)**

### **Course Syllabus**

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### **Course Description**

Students will create, analyze, and interpret basic mathematical models from informal problem statements; argue that the models constructed are reasonable; and use the models to provide insight into the original problem. Life-long critical thinking and quantitative reasoning skills will be taught.

### **Course Learning Outcomes**

By the end of this course, you will be able to:

1. Explain mathematical information presented in various forms (e.g., equations, graphs, diagrams, tables, words).
2. Convert information from one mathematical form (e.g., equations, graphs, diagrams, tables, words) into another.
3. Perform arithmetical and mathematical calculations.
4. Make and draw conclusions based on quantitative analysis.
5. Make and evaluate important assumptions in estimation, modeling, and data analysis.
6. Explain thoughts and processes in terms of what evidence is used, how it is organized, presented, and contextualized, both verbally and in writing.

### **Required Textbook(s) and Resources**

For this course you will need the following materials:

Bennett, J.O., Briggs, W.L. (2019). *Using and Understanding Mathematics: A Quantitative Reasoning Approach*, (7th Ed.). Boston, MA: Pearson Print ISBN: 9780134705187

This book is an eTextbook included along with your online homework system (MyLab Math) and is included with your course fees.

**A basic scientific calculator is also necessary for this course.**

Be sure to also review the weekly **Explore** sections for additional library or web resources. For access to databases, research help, and writing tips, visit the [Tiffin University Library](#). You might consider registering for one of the library's many webinars on library research, source evaluation, copyright, and other topics, at the [Library Events - Upcoming Events](#) web page. For further assistance email a librarian, at: [library@tiffin.edu](mailto:library@tiffin.edu).

## Time Commitment

Effective time management is possibly the single most critical element to your academic success. To do well in this class you should plan your time wisely. With our accelerated, seven-week term, you should reserve roughly **twenty (20) hours per week** to complete readings and assignments. To help plan your time and keep on track toward successful course completion, note the distinctive rhythm of assignment due dates.

To help plan your time and keep on track toward successful course completion, note the distinctive rhythm of assignment due dates:

1. All times assume Eastern Time (GMT-4).
2. Weeks begin at 12:00 a.m. ET on Monday and end at 11:55 p.m. ET on Sunday.
3. Unless otherwise noted, initial forum discussion posts are due by **11:55 p.m. ET on Wednesdays** and response posts are due by **11:55 p.m. ET on Saturdays**.
4. Major assignments and reflections are due by **11:55 p.m. ET on Sundays**.

## Learning Activities

Throughout this course, you will complete both individual and in-group assignments that aim at assessing your mastery of the content and how you would apply it in real-life scenarios. You will complete weekly discussions involving responses to text book questions and other case studies. You will also complete multiple homework assignment within MyMathLab. You will complete two unit assessments and a final exam. As a direct application of the finance unit, you will complete a Finance Project, which requires you to answer a series of questions concerning interest, savings plans, and loan repayment. For the Statistics Project, you will collaborate with assigned group members to complete the various task (i.e., identifying a topic of interest, collecting and analyzing data, and creating a five number summary). >

## Grading

The chart below identifies the individual contributions from each type of activity, per week.

| Activity               | Week 1     | Week 2     | Week 3     | Week 4     | Week 5     | Week 6     | Week 7     | Total       |
|------------------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| Discussions            | -          | -          | 20         | 20         | 20         | 20         | -          | 80          |
| MyLab Math Assignments | 48         | 60         | 36         | 82         | 28         | 86         | -          | 340         |
| Written Assignments    | 30<br>30   | 30<br>30   | -          | 30         | 30         | -          | 20         | 200         |
| Project                | -          | -          | 50         | -          | -          | -          | 50         | 100         |
| Quizzes & Tests        | 20         | 20         | 50         | 20         | 50         | 20         | 100        | 280         |
| <b>Total</b>           | <b>128</b> | <b>140</b> | <b>156</b> | <b>152</b> | <b>128</b> | <b>126</b> | <b>170</b> | <b>1000</b> |

### Grading Scale

| Grade | Percentage |
|-------|------------|
| A     | 90-100%    |
| B     | 80-89%     |
| C     | 70-79%     |
| D     | 60-69%     |
| F     | <60%       |

Please see the [Academic Bulletin](#) for grade appeal information.

### Course Schedule and Weekly Checklist

| Topic   | Learning Activities (Due by 11:55 p.m. ET on day designated)   |
|---------|--|
| Week 1: | <input type="checkbox"/> WED: Activity 1.1: Meet Your Peers – Initial Post<br><input type="checkbox"/> SAT: Activity 1.1: Meet Your Peers – Response Posts |

| Topic   | Learning Activities (Due by 11:55 p.m. ET on day designated)   |
|---|--|
| Practical Uses for Math   | <input type="checkbox"/> SUN: Activity 1.2: Homework in MyLab Math<br><input type="checkbox"/> SUN: Activity 1.3: Section 12B Response<br><input type="checkbox"/> SUN: Activity 1.4: Section 3A Response<br><input type="checkbox"/> SUN: Activity 1.5: Quiz 1 in MyLab Math  |
| Week 2:<br>Managing Money   | <input type="checkbox"/> SUN: Activity 2.1: Homework in MyLab Math<br><input type="checkbox"/> SUN: Activity 2.2: Section 4A Response<br><input type="checkbox"/> SUN: Activity 2.3: Section 4B Response<br><input type="checkbox"/> SUN: Activity 2.4: Quiz 2 in MyLab Math<br><input type="checkbox"/> SUN: Activity 2.5: Review Finance Project   |
| Week 3:<br>Taxes, Test and Linear Modeling                                | <input type="checkbox"/> WED: Activity 3.1: Discuss Section 9B – Initial Post<br><input type="checkbox"/> SAT: Activity 3.1: Discuss Section 9B – Response Posts<br><input type="checkbox"/> SUN: Activity 3.2: Homework in MyLab Math<br><input type="checkbox"/> SUN: Activity 3.3: Finance Project<br><input type="checkbox"/> SUN: Activity 3.4: Test 1 in MyLab Math  |
| Week 4:<br>Exponential Modeling, Probability, and How Numbers can Deceive | <input type="checkbox"/> WED: Activity 4.1: Discuss Section 7B – Initial Post<br><input type="checkbox"/> SAT: Activity 4.1: Discuss Section 7B – Response Posts<br><input type="checkbox"/> SUN: Activity 4.2: Homework in MyLab Math<br><input type="checkbox"/> SUN: Activity 4.3: Section 3E Response<br><input type="checkbox"/> SUN: Activity 4.4: Quiz 3 in MyLab Math  |
| Week 5:<br>Assessing Risk and Counting Techniques for Probabilities       | <input type="checkbox"/> WED: Activity 5.1: Discuss Section 7E<br><input type="checkbox"/> SAT: Activity 5.1: Discuss Section 7E<br><input type="checkbox"/> SUN: Activity 5.2: Homework in MyLab Math<br><input type="checkbox"/> SUN: Activity 5.3: Section 7D Response<br><input type="checkbox"/> SUN: Activity 5.4: Test 2 in MyLab Math<br><input type="checkbox"/> SUN: Activity 5.5: Review Statistics Project |
| Week 6:   | <input type="checkbox"/> WED: Activity 6.1: Discuss Section 5D – Initial Post  |

| Topic  | Learning Activities (Due by 11:55 p.m. ET on day designated)  |
|--|---|
| Assessing Risk and Counting Techniques for Probabilities | <input type="checkbox"/> SAT: Activity 6.1: Discuss Section 5D – Response Posts<br><input type="checkbox"/> SUN: Activity 6.2: Homework in MyLab Math<br><input type="checkbox"/> SUN: Activity 6.3: Quiz 4 in MyLab Math |
| Week 7:<br>Final Project and Exam                        | <input type="checkbox"/> THU: Activity 7.1: Statistics Project<br><input type="checkbox"/> SUN: Activity 7.2: Reflection<br><input type="checkbox"/> SUN: Activity 7.3: Final Exam in MyLab Math                          |

## Tips for Success

Online learning requires self-discipline and self-direction. As seekers of the truth, we should be willing to challenge one another's academic work in a spirit of respectful comradery. Your course is a place for you to grow as you benefit from the expertise, experience, and diverse perspectives of your instructor and peers. Constructive feedback will challenge you to stretch your own thinking, thereby expanding your knowledge and understanding.

To get the most out of your learning experience, you should actively engage (participate) in **ALL** course activities. Course elements are arranged chronologically. To complete a week, simply work your way "down the page" through all of the course materials and activities.

## Your Instructor Will Expect You to:

- Thoroughly review orientation materials (Start Here) within the first 48 hours of the term.
- Monitor your TU email account **daily** for important updates and announcements.
- Take ownership of your learning experience and act in a proactive, self-directed manner. That means:
  - Fully participate in all learning activities.
  - Complete assignments as described in rubrics or other instructions.
  - Submit all work on time and in the specified format (e.g. APA format for citations).
  - Utilize and incorporate instructor provided feedback to improve your work.
  - Ask questions so you can better understand course material or assignments.
  - Use the highest standards of intellectual honesty and integrity. For details, see the TU Library guide: [Digital Literacy: Netiquette and Internet Safety](#).
  - Treat others respectfully and demonstrate "netiquette" (online politeness and respectfulness) at all times. TU celebrates cultural uniqueness and expects all students to be considerate and thoughtful throughout their learning experiences.

## **You Should Expect Your Instructors to:**

- Post an introductory announcement/email at the beginning of each week to provide updates and help you prepare for the week's activities.
- Maintain an active and engaged presence in all course activities and throughout the course.
- Respond to your emailed questions within 48 hours, if not sooner.
- Clearly communicate any absences or expected non-participation due to extenuating circumstances. For example, "I will be traveling to attend a funeral this week and may not be able to respond to questions or participate in forums for a couple of days."
- When grading your work:
  - clearly indicate their grading approach (what they like to see in submitted work as well as what types of errors they tend to penalize more harshly),
  - thoroughly review and evaluate your submissions in a timely manner (in less than 5 days for most assignments), and
  - provide constructive feedback on the strengths and weaknesses of your work with suggestions on how you can improve your performance on future assignments.
- Advocate for your success as a learner and help guide you toward successful completion of the course activities and most importantly, attainment of the course learning outcomes.

## **Accommodations (Disability Services)**

The Office of Disability Services supports the institutional commitment to diversity by providing educational opportunities for qualified individuals with disabilities through accessible programs and services in compliance with Section 504 of the Rehabilitation Act of 1973 and Title III of the Americans with Disabilities Act (ADA) of 1990. If you need reasonable accommodations due to a documented disability, contact the Office for Equity, Access, & Opportunity via email at [disabilityservices@tiffin.edu](mailto:disabilityservices@tiffin.edu) or by calling 419-448-3021.

## **Technical Support**

For Moodle support, either email [moodlesupport@tiffin.edu](mailto:moodlesupport@tiffin.edu) or call the 24/7 Technical Support Call Center at 855-664-1200 (3430, Option 2, from on-campus). For non-Moodle support, contact the Tiffin University ITS helpdesk at the number above or submit a [support ticket](#).

## **Veterans**

The Veteran and Military Resource Center assists veterans, active Military, and spouses of current service members in utilizing their education benefits. VMRC provides information

regarding benefit processes and procedures, as well as support in navigating the transition from military to academic life by facilitating connections with the appropriate support services on campus. More information can be found on the Veteran and Military Resource Center website, at <http://www.tiffin.edu/va>.

## **Additional Support**

If you need to consult an academic advisor refer to TU's [Meet the Team](#) page. For information about TU's peer tutoring program see the Murphy Center's [Tutoring Policies and Procedures](#) page.

## **Comments or Concerns**

TU's online programs are designed to be student *driven*: to empower you with a voice and stake in your learning. Our courses feature multiple and varied ways that you can share feedback, and we invite you to become an active voice and help drive our improvement efforts. In addition to providing in-course feedback, we encourage you to submit questions or comments directly to the online team at [online@tiffin.edu](mailto:online@tiffin.edu).