

## Marshall University Syllabus Department of Mathematics MTH 132-202 Spring 2023

| <b>Course Title:</b>   | Precalculus with Science Applications   |  |  |
|------------------------|---|--|--|
| Course Number:         | MTH 132 Section 202 CRN 4056 Credit: 5 Hours  |  |  |
| Textbook:              | Algebra & Trigonometry by Openstax, ISBN 9781938168376<br>A physical copy is not needed.  |  |  |
| Sections Covered:      | 1.5, 2.1, 2.2, 2.4 - 2.7, 3.1 - 3.7, 4.1, 4.2, 5.1 - 5.6, 6.1 - 6.6, 7.1 - 7.4, 8.1 - 8.3, 9.1 - 9.5, 10.1 - 10.5, 10.8, 11.1, 11.2, 11.4 - 11.8  |  |  |
| Course<br>Description: | Functions used in calculus including polynomial, rational, exponential,<br>logarithmic, and trigonometric. Systems of equations and inequalities, conic<br>sections, polar and parametric equations, sequences and series, Binomial<br>Theorem.   |  |  |
| Calculator:            | TI-83 or higher is recommended.<br>However, graphing calculator may not be allowed for some problems on exams.  |  |  |
| Prerequisites:         | ACT Math 24 or above or a grade of C or higher in MTH 127 or MTH 130  |  |  |
| Meeting Time:          | MTWRF: 11:00 – 11:50 AM   |  |  |
| Classroom:             | Smith Hall 516  |  |  |
| T                      | Dr. Deserved Variant  |  |  |
| Instructor:            | Dr. Basant Karna  |  |  |
| Office:                | Smith Hall 715  |  |  |
| Office Hours:          | MW: 1:00-2:00 PM, TR: 12:00-2:00 PM (Others by appointment)   |  |  |
| Phone/Email:           | Phone: (304) 696-4332, Email: karna@marshall.edu  |  |  |
| ~                      |   |  |  |
| Course<br>Objectives:  | The objectives of this course are to provide students with a clear understanding<br>of Polynomial, Rational, Exponential, Logarithmic, Trigonometric functions and<br>their graphs. Furthermore, students will learn about trigonometric identities and<br>equations, the laws of Sines and Cosines, graph of polar equations, vectors,<br>systems of linear equations and inequalities, partial fractions, conic sections etc. |  |  |
| Course Contents:       | <ul> <li>Algebra and Geometry Review</li> <li>Equations and Graphs, Functions</li> <li>Polynomial and Rational Functions</li> <li>Exponential and Logarithmic Functions</li> <li>Trigonometric Functions</li> <li>Trigonometric Identities and Equations</li> <li>Systems of Equations and Inequalities</li> <li>Polar Coordinates and Parametric Equations</li> <li>Vectors in Two Dimensions</li> </ul>                       |  |  |
| Attendance Policy:     | Attendance is required. Having more than $25\%$ absences may result in a course grade of F! Absences which can be excused include COVID-19 related absences, illness, emergencies, or participation in another university activity. Excused absences must be approved by the office of the dean of students.  |  |  |

| Course Student Learning            |   | How student will practice                      | How student achievement of                |  |
|------------------------------------|---|--|---|--|
| Cutcomes                           |   | Stadents will an effect this                   | each outcome will be assessed             |  |
| Student will demonst               | rate and  | Students will practice this                    | Homework assignments, three               |  |
| apply knowledge of p               | properties of   | outcome by doing nomework                      | exams, and the final exam                 |  |
| retional average in the            | polynomial,   | and in class activities.                       |   |  |
| rational, exponential, logarithmic |   |  |   |  |
| and trigonometric.                 |   | <u> </u>                                       |   |  |
| Student will perform basic         |   | Students will practice this                    | Homework assignments, three               |  |
| operations and solve               | applications  | outcome by doing nomework                      | exams, and the final exam                 |  |
| using vector algebra.              |   |  |   |  |
| Students will use pro              | perties of  | Students will practice this                    | Homework assignments, three               |  |
| arithmetic and geome               | etric   | outcome by doing homework                      | exams, and the final exam                 |  |
| sequences and series               | to identify   | and in class activities.                       |   |  |
| terms, find sums and solve         |   |  |   |  |
| applications.                      |   |  |   |  |
| Grading Policy:                    | A. Exams: T   | here will be 3 exams given in cla              | SS.                                       |  |
|                                    | B. Homewor  | k Problems: 10 Homework assis                  | gnments will be given and                 |  |
|                                    | collected.  |  | c c                                       |  |
|                                    | You are resp  | onsible for reading the text, work             | king the exercises, and being aware       |  |
|                                    | of the dates f  | for the major exams.                           |   |  |
|                                    | C. Final Exa  | m: There will be a two-hour final              | exam on April 25 at 10:15 AM.             |  |
|                                    |   |  |   |  |
| Points                             | Attendance/   | Feaching Eval30 Pts                            |   |  |
| Distribution:                      | Homework  | 100 Pts  | S   |  |
|                                    | Exams<br>Einel Exam   | 300 Pt   | 5   |  |
|                                    | Final Exam  | 100 Pts  |   |  |
|                                    | Total Pts:  | 530 Pts  | 3   |  |
| Grades                             | The semester  | r grade will be based on the perce             | entage of the 530 total possible          |  |
|                                    | points, using the following scale.                                      |  |   |  |
|                                    | A: 90 -100 %, B: 80 - 89 %, C: 70 - 79 %, D: 60 - 69 %, F: 0 - 59 %     |  |   |  |
|                                    | The class sc  | ore will be posted on https://ww               | w.marshall.edu/design-center/             |  |
|                                    |   |  |   |  |
| Make-ups:                          | A. Exams: Making up a missed exam is possible only if you receive prior |  |   |  |
|                                    | permission fi   | rom me and only for serious and                | unavoidable circumstances.                |  |
| Exom Datas                         | B. Final: If y  | you don't take the final exam, you             | u will receive "r" for the class.         |  |
| Exam Dates                         | Examination Final Examination   | $\Delta pril 25 @ 10.15 AM (Tuesday)$          | $\frac{1113 - 10121131}{1}$               |  |
| <u> </u>                           | r mar Exam.   | $\frac{1}{10000000000000000000000000000000000$ | /   |  |
| Important Dates:                   | • January 16  | . Monday – MLK. Jr. Holiday                    |   |  |
|                                    | • January 17  | . Tuesday – "W" Withdrawal per                 | riod begins                               |  |
|                                    | • March 13,   | Monday - March 17, Friday–Sp                   | ring Break                                |  |
|                                    | • April 14, N   | Anday – Last day to drop                       | -   |  |
|                                    | • April 21, F   | Friday – Last class day                        |   |  |
| Disruptive                         | If your action  | ns become disruptive or distractin             | g for me or another student, you will     |  |
| Actions:                           | be asked to   | cease your behavior. Disruptive                | behavior may include but are not          |  |
|                                    | limited to the  | e following: cell phone use in cla             | ss, talking during class, and the use     |  |
|                                    | of iPods or N   | AP3 players during class. These v              | will count as <b>unexcused absences</b> . |  |
|                                    |   |  |   |  |
| Coming Late:                       | Students sho  | uld join on time and stay in the c             | lass for entire class.                    |  |

| University<br>Policies: | <ul> <li>By enrolling in this course, you agree to the University Policies. Please read the full text of each policy (listed below) by going to MU Academic Affairs:</li> <li>University Policies. (URL: http://www.marshall.edu/academic-affairs/policies/)</li> <li>Academic Dishonesty Policy</li> <li>Academic Dismissal Policy</li> <li>Academic Forgiveness Policy</li> <li>Academic Probation and Suspension Policy</li> <li>Affirmative Action Policy</li> <li>Dead Week Policy</li> <li>D/F Repeat Rule</li> <li>Excused Absence Policy for Undergraduates</li> <li>Inclement Weather Policy</li> <li>Sexual Harassment Policy</li> <li>Students with Disabilities (Policies and Procedures)</li> <li>University Computing Services Acceptable Use Policy</li> </ul> |
|-------------------------|---|
| Academic                | For beginning, ending, and add/drop dates, see the <u>Marshall University</u>   |
| Calendar:               | <u>Academic Calendar</u> (URL: http://www.marshall.edu/academic-calendar/).   |

Note: Homework assignments will be posted on the blackboard.

Health and Safety Information All members of the Marshall University community are expected to always observe health and safety protocols. This includes general health and safety protocols as well as specific protocols that might emerge in response to community and campus health conditions.

## **Course Schedule (Tentative)**

| Week | Sections Covered  |
|------|---|
| 1    | 1.5, 1.6, 2.1, 2.2  |
| 2    | 2.4, 2.5, 2.6, 2.7, 3.1                                       |
| 3    | 3.2, 3.3, 3.4, 3.5  |
| 4    | 3.6, 3.7, 4.1, Review for Exam 1, <b>Exam 1 on February 3</b> |
| 5    | 4.2, 5.1, 5.2, 5.3  |
| 6    | 5.4, 5.5, 5.6, 6.1  |
| 7    | 6.2, 6.3, 6.4, 6.5  |
| 8    | 6.6, 7.1, 7.2, Review for Exam 2, <b>Exam 2 on March 3</b>    |
| 9    | 7.3, 7.4, 8.1, 8.2  |
| 10   | March 13, Monday- March 17, Friday – Spring Break             |
| 11   | 8.3, 9.1, 9.2, 9.3  |
| 12   | 9.4, 9.5, 10.1, Review for Exam 3, Exam 3 on March 31         |
| 13   | 10.2, 10.3, 10.4, 10.5  |
| 14   | 10.8, 11.1, 11.2, 11.5  |
| 15   | 11.6, 11.7, 11.8, Review for Final exam                       |
| 16   | Final Exam: April 25 @ 10:15 AM (Tuesday)                     |