# Marshall University

# MTH 132 – SEC 104: Precalculus with Science Applications
# CRN 3017 – Fall 2018

**Class Time**: MTWRF 1:00 – 1:50 PM
**Location**: WAEC 3121
(Tentative Syllabus)

**INSTRUCTOR**: Dr. Ansam Al-Aqtash
**OFFICE**: (Smith Hall) SH 740C
**OFFICE PHONE**: 304-696-3036
**E-mail**: alaqtasha@marshall.edu

**OFFICE HOURS**: **MTWR** 9:00 – 9:50 AM, **MW** 11-11:50 AM, others by appointment.

**UNIVERSITY POLICIES:** By enrolling in this course, you agree to the University Policies listed below. Please read the full text of each policy by going to www.marshall.edu/academic-affairs and clicking on "Marshall University Policies." Or, you can access the policies directly by going to
http://www.marshall.edu/academic-affairs/policies/
Academic Dishonesty/ Excused Absence Policy for Undergraduates/ Computing Services Acceptable Use/ Inclement Weather/ Dead Week/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities of Students/ Affirmative Action/ Sexual Harassment. The most recent revision of the 2015-2016 undergraduate catalog can be obtained at
http://www.marshall.edu/catalog/files/UG_15-16_final_published.pdf

**Academic Integrity**:

- The University Rules, including the Code of Conduct, and other documented policies of the department, college, and university related to academic integrity, will be enforced. **Any violation of these regulations will be dealt with on an individual basis according to the severity of the misconduct**.
- Please note that **any act** of ***Plagiarism***, ***Cheating***, or/and ***Academic Dishonesty*** will be **prosecuted to the maximum extent according to MU catalog**.

**CLASS RULES:**

1. **SILENT YOUR PHONES**.
2. If you need to leave the class early, inform your instructor before the class begins. Please **show your respect** to your classmates and your instructor.
3. **Good attendance is a major key to success in this (or any) class!** Students are expected to attend all scheduled classes.

**PREREQUISITES**: Math ACT 24 or above, or C or better in MTH 127 or C or better in MTH 130.

**Course catalog description**:
Functions used in calculus including polynomial, rational, exponential, logarithmic, and trigonometric. Systems of equations and inequalities, conic sections, polar and parametric equations, sequences and series, Binomial Theorem.

# Marshall University

| Course Student Learning Outcomes: | How students will practice each outcome in this Course | How student achievement of each outcome will be assessed in this Course |
|---|---|---|
| Students will ... | | |
| further develop algebraic skills (ex. solving equations) which are essential in calculus. | Classroom discussion & homework | Homework, quizzes, midterms & final exam |
| learn about trigonometric functions and their applications with an intent for calculus. | | |
| learn about the functions which are used in calculus (ex. graphing and other properties). | | |
| learn which functions are appropriate for modeling different types of growth and change | | |

**TEXT: Algebra and Trigonometry, 4th edition, by James Stewart, Lothar Redlin, & Saleem Watson,** (ISBN: 9781305071742) **.**

**CALCULATOR:** Graphing calculator (i.e.TI-83, TI-84, etc.)

**MATERIAL**: We will cover most of the chapters of the text, with additional topics as time allows.

**List of topics**

- Very brief review of basic concepts of algebra, including
- Solving quadratic equations (with complex roots) and other equations and inequalities (ex. piecewise and absolute value)
- The definition of a function , including their graphs and properties (increasing, decreasing, average rates of change)
- The composition of functions and the resulting functions domain, Inverses of functions, scaling and translating the graphs of functions (graph transformations)
- Polynomial functions, division, Factor and Remainder Theorem, Fundamental Theorem of Algebra, optimizating quadratic functions, inequalities
- Rational functions, domains, finding asymptotes, inequalities
- Exponential functions, logarithmic functions and properties, equation solving, and basic modeling (interest, growth and decay)
- Right triangle trigonometry, law of sines and cosines, unit circle trigonometry
- Graphing the six trig functions and transformations of sine, cosine, and tangent
- Verifying identities and solving trig equations
- Modeling with trigonometric functions
- Polar and parametric equations, and 2D vectors (including dot product)
- Solving systems of linear equations using substitution and elimination (up to 3x3)
- Matrix operations and using matrices to solve systems of linear equations
- Sequences, series, The Binomial Theorem, and some of their applications

**GRADED WORK**: (700 points)

**1. Exams**

There will be three in-class midterm exams and a final exam. The final exam will be comprehensive. In case of extreme emergency, serious illness, or university related activity, when I have been notified with evidence or approval, or excused absences approved by the Dean of Student Affairs, the student will be allowed to make up the missed exam.

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|---|---|---|
| **Exam #1**: ***Friday, September 21st, 2018*** | (100 points) | ~ 14.3% |
| **Exam #2**: ***Friday, October 19th, 2018*** | (100 points) | ~ 14.3% |
| **Exam #3**: ***Friday, November 16th, 2018*** | (100 points) | ~ 14.3% |
| **Final Exam: *Friday, December 14th, 2018, 12:45 – 2:45 AM*** | (150 points) | ~ 21.4% |

**2. Quizzes and Classroom Activities** (100 points) ~ 14.3.%

**3. ATTENDANCE** (50 points) ~ 7.1%

**Good attendance is a major key to success in this (or any) class!**

**Attendance Policy**:

- Students are expected to attend all scheduled classes. **I'll reserve the right to drop 1 point for each absence**. It is the student's responsibility to find out what was discussed in a missed class.

- **In case of an emergency, when I am notified ahead of time, or when the absence is excused by the office of the dean of affairs, a student will be allowed to makeup a missed work.**

**4. Online Homework Assignments (WebWork)** **(**100 points) ~ 14.3%

All HW assignments to be completed online through WebWork
http://webwork.marshall.edu/webwork2 .
Students log in with their Marshall username (lowercase) and their Marshall password.

**To sign in:**

1) Go to http://webwork.marshall.edu/webwork2
2) Select your class **F18-Math-132-Al-Aqtash**. Once you get to your WebWorK course, you will see a login screen.
3) Enter your username and password and sign in (same as your Marshall username (lowercase) and your Marshall password).

**Roughly speaking 90% is at least an A , 80% is at least a B, 70% is at least a C, 60% is at least a D. Final grades will be determined by the end of the semester.**

**MATH TUTORING SERVICES**: Marshall University provides multiple options for free on-campus tutoring. It is the student's responsibility to take advantage of these facilities in addition to utilizing office hours.

- The Mathematics Department tutoring lab is located in Smith Hall 625 (computer lab). The tutoring hours are:
  - Monday-Thursday: 10:00am to 4:00pm, 5:00 to 6:30.
  - Friday: 10:00am to 12:00 noon

  The current schedule can be found at https://www.marshall.edu/math/tutoring/ . Schedules for the new semester are usually posted during the second week of classes.

- The University College has a tutoring lab Smith Communications Building (Room 211). Information regarding this facility can be found at http://www.marshall.edu/uc/tutoring-services/ .

**DROP: The last day to drop class (no entry to academic record) is Friday, August 24th, 2018.**

**Labor Day (Monday September 3rd 2018) – University closed.**

**Withdrawals: Friday (October 26th, 2018) is the last day to withdraw "W" from the class.**

**Thanksgiving recess (Monday November 19th – Saturday November 24th) Classes dismissed.**

**Dead Week (Monday December 3rd – Friday December 7th).**

The complete academic calendar is available at
https://www.marshall.edu/academic-calendar/fall-semester-2018/

**Blackboard / Electronic Communications**:

MUonline <Blackboard> will be used to post pertinent class information and course documents. For technical problems with Blackboard contact IT Services Desk 304-696-3200.

**Special Needs Policy**:

Policy for Students with Disabilities: Marshall University is committed to equal opportunity education for all students, including those with physical, learning and psychological disabilities. University policy states that it is the responsibility of students with disabilities to contact the Office of Disability Services (ODS) in Prichard Hall 117 (304.696.2467) to provide documentation of their disability. Following this, the ODS Coordinator will send a letter to each of the student's instructors outlining the academic accommodation he/she will need to ensure equality in classroom experience, outside assignment, testing, and grading. The instructor and student will meet to discuss how the accommodation(s) requested will be provided. For more information, access the website for the Office of Disabled Student Services:

http://www.marshall.edu/disabled