The mission of Concord University is to provide quality, liberal arts based education, to foster scholarly and creative activities and to serve the regional community (http://www.concord.edu/academics/).

Math 104: College Trigonometry
CRN: 20192 (01); 20193 (02)

Spring 2019
3 Credit Hours
Prerequisites: MATH 103, or Math ACT 25+,
        or Math SAT 600+.
Meeting Time: MWF 11:00-11:00 (01)
       or 8:00-8:50 (02)
Meeting Place: S105

Lisa Darlington
Associate Professor of Mathematics
Office Hours:
    MWF 10:00-11:00
    TR 11:00-12:00
    Other times by appointment
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Dept. URL: math.concord.edu

Purpose of Course: This course is a general mathematics course for all students. It is required for students taking upper level mathematics courses and many science majors.

Course Description: According to the catalog, this course includes: "Circular functions, trigonometric identities, applications to triangles, complex numbers." We will review functions, examine trig functions from multiple perspectives, and use trigonometry to solve a variety of problems involving both right and oblique triangles. The course is lecture-based, although I expect active participation from students. This is NOT a spectator course; to be successful you will need to put some effort into doing so.

Course Management System:

Moodle: I will be using Moodle for handouts, to post grades and give assignments. You can access Moodle at https://moodle.concord.edu; you can log in using your Concord username and password.   If you have password problems logging in, please contact the CU Help Desk. If this course is not in your course list once logged in, please contact the professor.

MyOpenMath: Weekly homework will be assigned via MyOpenMath. You can access MyOpenMath via Moodle or directly at https://www.myopenmath.com/. Create a new student account the first time you login. REMEMBER YOUR PASSWORD; I can't help you if you forget it. CourseID: 38668 Enrollment Key: MATH104CU

<u>Hardware/Software Needed</u> :

- Computer to access Moodle and MyOpenMath
- Scientific Calculator. The scientific calculators that you can find for under $20 at most stores will be sufficient for this course if you do not already have one. Do not feel you need to buy an expensive calculator. A cell phone calculator is not acceptable.

<u>Text:</u> Algebra and Trigonometry from OpenStax, ISBN 1938168372,
www.openstax.org/details/algebra-and-trigonometry
Good news: your textbook for this class is available for free online, in web view and PDF format (recommended)! You can also purchase a print version, if you prefer, via the campus bookstore or online.

<u>Concord University Educational Goal(s)</u> Addresses, at least in part, the following CU goals:

Skills 1, 2*, 4, 6; Knowledge 4, 7; Attiitudes 7

<u>National Standards:</u> Addresses, at least in part, the following national standards:
NCTM 1a. A.1.1, A.1.3, A.2.2-3, A.3.4-5, B.1.1, B.1.3, B.2.2-3, B.3.4-5, 2a, 2b, 2c. 2d, 2e

<u>Learning Outcomes:</u> An algebraic, graphic, and numeric approach to the study of:

- Graphing, evaluating, and properties of functions
  - the rectangular coordinate system, including distance, midpoint
  - properties of graphs, including intercepts, symmetry, even/odd, increasing, decreasing, and extrema
  - graphs of basic functions and graphing using transformations
  - functions: finding domain, range, image; function notation, the algebra of functions, composition of functions, and inverse functions
  - equations and graphs of circles
- Trigonometric functions from multiple perspectives (right triangle, unit circle)
  - angles in degrees (decimal and degree, minute second form) and radians, including conversion between different forms
  - arc length and area of section, including applications
  - trigonometric functions: right triangle, unit circle, and general definitions; properties of trigonometric functions
  - value of trig functions for key angles in quadrant I, and use of coterminal angles and reference angles to find values in any quadrant
  - graphs of basic trigonometric functions, and using transformations to graph more complicated functions
- Inverse trigonometric functions
  - definition and properties of inverse trigonometric functions, including range restrictions
  - applications of inverse trigonometric functions, including word problems and composition of functions
- Trigonometric identities and formulas
  - basic trig identities: quotient, reciprocal, Pythagorean, even/odd
  - proofs of trig identities, using algebra and basic trig identities
  - sum and difference formulas, half and double angle formulas
- Solving trigonometric equations
- Applications involving triangles
  - solving right and oblique triangles

- proof of applications of laws of sines and cosines, including word problems
- bearings, angles of elevation and declination
- Conic Sections
  - equations, graphs, and properties of circles, ellipses, parabolas, and hyperbolas
- Complex numbers, vectors, and polar coordinates (if time permits)

Note to Students: I really enjoy teaching this class. It's fascinating to see how everything is interconnected. Many students have seen some of this material before, but there is always someone who hasn't. Don't be afraid to ask questions—chances are someone else was thinking the same thing but didn't want to ask. If you're willing to put some effort into this course, I'll do anything reasonable I can to help you with it.

Course Requirements:

Final Exam: The final exam for this course is **Monday, May 6 at 11:30 (01)** or **9:00 (02).** Any request for deviation of the day or time scheduled by the University for a section's final exam should be submitted in writing at least two weeks prior to the scheduled exam.

Grade determinants: **Grading Scale:**

Tests: (16% each)	64%	A	90-100 %
Quizzes and Assignments	16%	B	80-89 %
Final Exam:	20%	C	70-79 %
		D	60-69 %
		F	0-59 %

As you can see, the bulk of your grade is based upon test scores. In addition, there will be online assignments and quizzes on a regular basis. This is to make sure you're keeping up with the class and to give me a quick idea of who needs help. Practice problems are not directly graded; however, if you don't do the practice work, you won't be successful on quizzes or tests. Occasionally I will include an in-class assignment as a quiz grade. I generally offer extra credit once during the semester—take it when it is offered, because it is not available upon request.

Course Calendar: Pacing of the course will vary, be we generally cover one section of the book per 50-minute class meeting. Tests are given (roughly) at the end of each chapter. We will begin with a review of algebra topics (Ch. 3), then we will cover chapters 7-10, and additional topics if time permits.

Audit Status: Students who chose to officially audit this course are also bound by the attendance policy, as well as all other policies governing this course. No student will be allowed to change their status to "audit" after the first week of the semester.

Tests: Students participating in college approved activities on the day of a test must make arrangements to take that test prior to the scheduled testing date in accordance with the University Catalog policy for participation in these events. If you have an emergency and must be absent on a test date, contact me **within 24 hours** of the test to make alternative arrangements. No notes or textbooks may be used during tests.

Withdrawals: Students may be administratively withdrawn from a course for non-attendance or disruptive behavior. If you choose to stop attending any course, you should contact your academic advisor to fill out the necessary paperwork and formally withdraw from the course. It

should be noted that a reduction in student credit hours for the semester may have an adverse impact on the student's academic status, financial aid, and insurance eligibility.

Accessibility/Accommodations: Concord University is committed to responding to the needs of students with disabilities as defined by the Americans with Disabilities Act. Please inform your instructor at the beginning of the class semester if you have a disability and are requesting accommodations. It is your responsibility to self-disclose that you are requesting accommodations. The University and instructor will provide you with a reasonable accommodation. You should register with CU's Disability Services Office, located in the Athens campus Jerry and Jean Beasley Student Center, Bottom Floor, across from the Campus Post Office. The Disability Services Office phone is 304-384-6086 or you can email the Director, Nancy Ellison, at nellison@concord.edu for assistance.

Academic Dishonesty: Academic dishonesty is morally unacceptable as well as destructive to the learning and teaching atmosphere. Academic dishonesty includes the giving or receiving of improper help on examinations or assignments, falsifying documents, and plagiarism (the act of stealing and using, as one's own, the ideas or the expression of the ideas of another). Such dishonesty can lead to a variety of penalties — including but not limited to failure of assignment, failure of course, loss of institutional privileges, or dismissal from the University. (See University Catalog Academic Policies and Procedures.)

Concord University Honor Code: A Concord University Honor Code was approved by students, staff, faculty, administration, and the CU Board of Governors. The Code states:

"As a member of the Concord University Community I will act with honesty and integrity in accordance with our fundamental principles and I will respect myself and others while challenging them to do the same."

The Honor Code is intended to unite the Concord community behind a culture of honesty, integrity, and civility.

Class/Online Attendance Policy: Regular class attendance is part of a student's academic obligation at Concord. Irregular attendance may affect academic performance adversely and is detrimental to the atmosphere of a class. (See University Catalog Academic Policies and Procedures.)

*Attendance: Students are expected to attend all scheduled class meetings. Make sure you sign the attendance sheet for each class you attend. It is your responsibility to document any absence and to make arrangements for any work missed. Five or more absences may result in being dropped from the class with a grade of 'W; or 'F' (see the Concord University Catalog).

Emergency Alert System: In an effort to increase safety and security on our campus, Concord University encourages everyone to register for instant text message alerts. Alerts will only be used for security and safety notices. All students, faculty, and staff are eligible to receive text message alerts on their cell phones or email alerts. Please contact the IT Help Desk for further assistance (304-384-5291).

Emergency Information: Emergency/courtesy telephones are located at the main entrance of each residence hall and at various other locations on campus. Emergency telephones can be identified by the flashing blue light and will provide the user with a direct link to Public Safety at the press of a button. To report an on-campus emergency, call 304-384-5357 or 911. The

Office of Public Safety is located on the bottom floor of the Rahall Technology Center. For further emergency information go to: http://www.concord.edu/administration/office-public-safety.

Inclement Weather Policy: As a general policy, the University will remain in normal operations during adverse weather conditions. In the event of severe weather conditions, the following may occur:

<blockquote>

University Closure
No students or employees are to report.

Classes Cancelled
Students do NOT report BUT employees are expected to report to work at their normal time.

Operating on an Inclement Weather Delay
Under this schedule, all 8 a.m. classes will start at 10 a.m. Students and faculty will follow the Inclement Weather Schedule. (See http://www.concord.edu/emergency-alerts for Athens/Beckley Inclement Weather Schedules.)

Announcements invoking the late schedule or other options referenced above are aired on area radio and television stations and are sent as text and email messages to those enrolled for this service.

</blockquote>

*Attendance – Inclement Weather: Inclement weather sometimes poses a problem. I echo the official University policy on student safety. **If the university is on an inclement weather schedule, class will meet MWF from 12:15-12:55 (01) or 10:00-10:40 (02).**

Student Conduct: In classrooms, online, laboratories, and during any activities that are part of course requirements, students are expected to observe reasonable rules of conduct.

*Classroom Conduct:

- No tobacco products of any kind allowed in the classroom.
- You may bring food or drink into the classroom, but you must remove all wrappers and containers when you leave. You have the responsibility of cleaning up any messes related to food or drink.
- Once class has begun, do not leave the room unless it is an emergency.
- Cell phones are not permitted and should be turned off during class.   If you must take an emergency call, please step outside of the room to do so. You may be asked to leave your cell phone at the front of the room during tests.
- It is your responsibility to inquire about work missed due to absences.
- Calculators may be used on tests, quizzes, or exams; however, cell phone calculators may NOT be used.

Sexual Harassment & Assault: Federal law, Title IX, and Concord University policy prohibits discrimination, harassment, and violence based on sex and gender (Including sexual harassment, sexual assault, domestic/dating violence, stalking, sexual exploitation, and retaliation). If you or someone you know has been harassed or assaulted, you can receive confidential counseling support through the Concord University Counseling Center (304-384-5290). Alleged Violations can be reported non-confidentially to the Concord University Title IX

Coordinator at 304-384-6327 or titleix@concord.edu. Reports to Campus Security can be made at (304-384-5357). As an employee at Concord University, I am a mandatory reporter which means I must report any sexual misconduct I am made aware of. This includes verbal or written (such as in an assignment) disclosures of sexual harassment or sexual assault.

Technology Services: Contact the CU Help Desk at extension 5291 from campus or 304-384-5291 off campus. You may also e-mail cuhelpdesk@concord.edu.
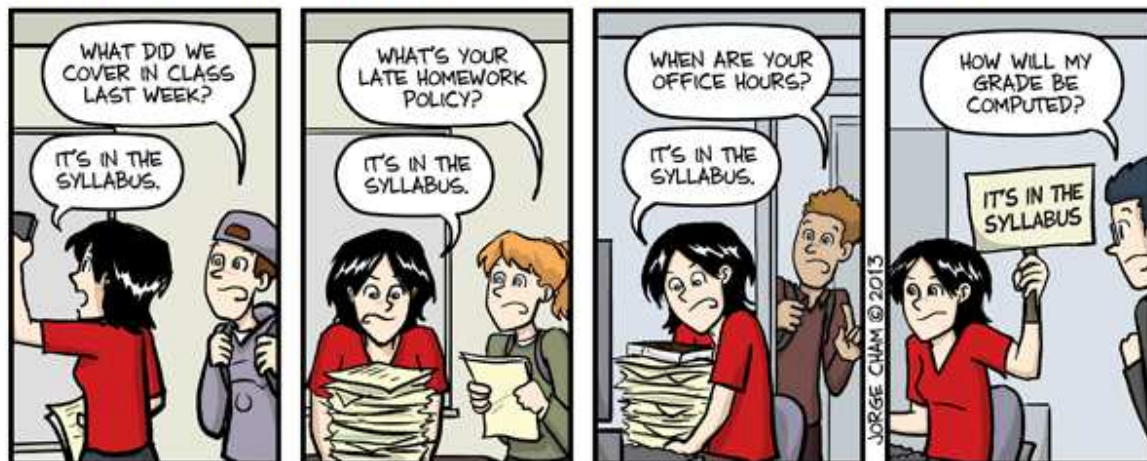
Syllabus Disclaimer

"This syllabus is subject to change based on the needs of the class. Please check it regularly."

Tools for Success:

- Do your homework. Make sure you understand what you're doing. Ask for help.
- Read your textbook. It gives additional examples beyond what we cover in class.
- Visit me during office hours. If I'm busy I may seem grumpy, but that doesn't mean I don't want to see you. That's what office hours are for.
- Tutoring is available from math students in S108 (free); look for a posted schedule.
- Walk-in tutoring and one-on-one tutoring is (freely) available from Student Support Services and the Academic Success Center. Individual tutors fill up fast, so ask early. Look for flyers for walk-in times or see https://apps.concord.edu/tutoring/
- Online tutoring is available (also free) through SmartThinking; login into MyCU for info

...and if it's not on the syllabus, look on Moodle!