**Lincoln University**

**Department of Mathematical Sciences**

**Master Course Syllabus**

|  |  |  |  |
| --- | --- | --- | --- |
| **Course Title:** | **Pre-Calculus** | **Course number:** | **MAT111**  **/ MAT111L** |
| **Credit Hours** | 4 | **Prerequisite (s):** | **MAT110 (C or better)** |
| **Term:** |  | **Co-Requisite (s)** |  |
| **Course Method** | Lecture / Lab | **Meeting day and Time:** | **3 hrs lecture + 2 hrs. lab** |
| **Instructor:** |  | **Classroom/lab/Studio Location:** |  |
| **Office location:** |  | **e-mail:** |  |
| **Office Hours:** |  | **Phone Extension:** |  |

**COURSE DESCRIPTION:**

This course is an introduction to algebraic techniques, functions and graphs, which are essential in order to understand and use higher level mathematics in courses beginning with calculus. Topics include exponential, logarithmic, trigonometric, and inverse trigonometric functions.

**REQUIRED TEXT:**

**ALEKS 360** with E-book Coburn, J. Precalculus (2nd Edition) . McGraw-Hill 2009.

**REQUIRED MATERIALS:**

The ALEKS code will be provided in lab and charged as a lab fee.

**Assessment Criteria & Alignment**

|  |  |  |  |
| --- | --- | --- | --- |
| Course SLO | PSLOs | ILOs | Direct and Indirect Assessment Methods |
| CSLO 1 | N/A | ILO\_7 | ALEKS Assessment, Homework & Participation, Tests, & Final Exam\* |
| CSLO 2 | N/A | ILO\_7 | ALEKS Assessment, Homework & Participation, Tests, & Final Exam\* |
| CSLO 3 | N/A | ILO\_7 | ALEKS Assessment, Homework & Participation, Tests, & Final Exam\* |
| CSLO 4 | N/A | ILO\_7 | ALEKS Assessment, Homework & Participation, Tests, & Final Exam\* |

\* See information at end of syllabus

**Course Student Learning Outcomes (CSLO):**

Upon successful completion of this course the student will:

CSLO #1 Evaluate and graph exponential and logarithmic functions, simplify expression using properties of logarithms and solve equations involving exponents and logarithms;

CSLO #2 Evaluate, use, and graph trigonometric functions in the Cartesian plane and in right triangles.

CSLO #3 Use trigonometric identities to simplify, rewrite, or evaluate expressions and equations.

CSLO #4 Name the domains of and evaluate the values of inverse trigonometric functions.

**Program Student Learning Outcomes (PSLO):** N/A

**Institutional Learning Outcomes (ILO):**

ILO #7: Scientific & Quantitative Reasoning

Quantitative Reasoning represents the ability to reason and solve quantitative problems from a wide array of authentic contexts and everyday life situations. Students will be able to create arguments supported by quantitative evidence and can clearly communicate those arguments in a variety of formats (using words, tables, graphs, mathematical equations, and computer programs as appropriate).

**Calculation of Final Grades**:

|  |  |
| --- | --- |
| Homework on ALEKS | 10% |
| Lab Participation | 10% |
| Tests (4 at 15% each) | 60% |
| Cumulative Final Exam | 20% |

**GRADING SCALE:** (Should follow Department and/or College Template)

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Grade | A | A- | B+ | B | B- | C+ | C | C- | D+ | D | F |
| GPA Points | 4.0 | 3.7 | 3.3 | 3.0 | 2.7 | 2.3 | 2.0 | 1.7 | 1.3 | 1.0 | 0.0 |
| % | 100-93 | 92.9-90 | 89.9-88 | 87.9-82 | 81.9-80 | 79.9-78 | 77.9-72 | 71.9-70 | 69.9-67 | 66.9-60.1 | 60 and under |

**SCHEDULE OF LEARNING topics covered**

|  |  |
| --- | --- |
| **Schedule of Assignments – Homework Sets on ALEKS**  *\*\*Assignment Selection and schedule may be subject to change\*\** | |
| Week 01 | Prerequisite Review  Read 4.1 One-to-one and Inverse Functions  Read 4.2 Exponential Functions  Read 4.3 Logarithmic Functions  Read 4.4 Properties & Equations  Test 1 |
| Week 02 |
| Week 03 |
| Week 04 |
| Week 05 | Read 5.1 Angles Measures and Special Angles  Read 5.2 Unit Circles  Read 5.3 Graphs of Sine and Cosine, Secant and Cosecant  Read 5.4 Graphs of Tangent and Co-Tangent  Read 5.4 Transformations & Applications  Test 2 |
| Week 06 |
| Week 07 |
| Week 08 |
| Week 09 | Read 5.6 Trigonometry of Right Triangles  Read 5.7 Trigonometry and the Coordinate Plane  Read 6.1 Fundamental Identities  Read 6.2 Verifying Identities  Test 3 |
| Week 10 |
| Week 11 |
| Week 12 | Read 6.3 Sum and Difference Identities  Read 6.4 Double Angle and Half-Angle Identities  Read 6.5 Inverse Trigonometric Functions  Read 6.6 Solving Trigonometric Equations  Read 6.7 General Trigonometric Equations  Test 4 |
| Week 13 |
| Week 14 |
| Week 15 | Final Exam Week - Comprehensive Final Exam |

**Schedule of Learning Topics Covered – Math Lab**

|  |  |
| --- | --- |
| **Homework Sets on ALEKS** | |
| Week 01 | ALEKS Homework 4.1 |
| Week 02 | ALEKS Homework 4.2 |
| Week 03 | ALEKS Homework 4.3 |
| Week 04 | ALEKS Homework 4.4 |
| Week 05 | ALEKS Homework 5.1 |
| Week 06 | ALEKS Homework 5.2 |
| Week 07 | ALEKS Homework 5.3 |
| Week 08 | ALEKS Homework 5.4 & 5.5 |
| Week 09 | ALEKS Homework 5.6 |
| Week 10 | ALEKS Homework 5.7 |
| Week 11 | ALEKS Homework 6.1 & 6.2 |
| Week 12 | ALEKS Homework 6.3 & 6.4 |
| Week 13 | ALEKS Homework 6.5 & 6.6 |
| Week 14 | ALEKS Homework 6.7 |
| Week 15 | Final Exam Week |

**Attendance Policy:**

Lincoln University uses the class method of teaching, which assumes that each student has something to contribute and something to gain by attending class. It further assumes that there is much more instruction absorbed in the classroom than can be tested on examinations. Therefore, students are expected to attend all regularly scheduled class meetings and should exhibit good faith in this regard.

• Absences will be counted starting **from the first day classes begin**.

• ***Three*** late arrivals (after 10 minutes) will be counted as one absence.

• After ***Three*** or more unexcused absences, grades may be lowered.

• The student is responsible for all work missed during those absences

• In case of illness, death in the family, other extenuating circumstances, athletic events or other University sanctioned activities the student must present documented evidence of inability to attend classes for an excused absence

<http://www.lincoln.edu/registrar/2016catalog.pdf>

**Students with Disabilities Statement:**

Lincoln University is committed to non-discrimination of students with disabilities and therefore ensures that they have equal access to higher education, programs, activities, and services in order to achieve full participation and integration into the University.  In keeping with the philosophies of the mission and vision of the University, the Office of Student Support Services, through the Services for Students with Disabilities (SSD) Program, provides an array of support services and reasonable accommodations for students with special needs and/or disabilities as defined by Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990.  The Services for Students with Disabilities Program seeks to promote awareness and a campus environment in which accommodating students with special needs and/or disabilities is natural extension of the University’s goal. Any students with disabilities should contact the Office of Student Support Services.

[http://www.lincoln.edu/student services/index.html](http://www.lincoln.edu/student%20services/index.html).

**The Student Conduct Code:**

Students will be held to the rules and regulations of the Student Conduct Code as described in the Lincoln University Student Handbook. Behavior that disrupts academic pursuits, or infringes upon the privacy, rights, or privileges of other persons is prohibited. It is expected of all students to show respect, fairness and consideration to all present. Excessive talking, arriving late or leaving early, leaving and reentering class, use of phones or pagers, or other means of disrupting the class will not be tolerated and students may be asked to leave. Students who constantly disrupt class may be asked to leave permanently and will receive an “F”.

<http://www.lincoln.edu/studentaffairs/The%20Lincoln%20University%20Student%20Handbook%202016-2017.pdf>

**University Academic Integrity Statement:**

Students are responsible for proper conduct and integrity in all of their scholastic work. They must follow a professor's instructions when completing tests, homework, and laboratory reports, and they must ask for clarification if the instructions are not clear. In general, students should not give or receive aid when taking exams, or exceed the time limitations specified by the professor. In seeking the truth, in learning to think critically, and in preparing for a life of constructive service, honesty is imperative. Honesty in the classroom and in the preparation of papers is, therefore, expected of all students. Each student has the responsibility to submit work that is uniquely his or her own. All of this work must be done in accordance with established principles of academic integrity.

Academic Dishonesty includes, but is not limited to offering, using and/or receiving unauthorized assistance, information, or materials during a test or exam.

Sanctions for violations of the academic integrity standards include:

* Warning: Attempted or implied act of misconduct.
* Failure of a Test: Observed incident of misconduct during an exam or on the test paper.
* Failure of Course and an official report of academic dishonesty: Blatant and/or pervasive cheating on an exam or repeated incidents in the class.

<http://www.lincoln.edu/registrar/2016catalog.pdf>

**Policy on Electronic Devices in the Classroom:**

Electronic devices (cell phones, tablets, laptops, etc.) may not be used in class except for educational purposes (e.g. note taking, recording assignments, etc). Students who violate this policy will receive a verbal warning for the first infraction and additional violations may result in the student being asked to leave class. Use of these devices during exams will be considered as academic dishonesty and will be subject to the sanctions described in the previous section.

**Assessment Methods (Tools) Direct & Indirect:**

**ALEKS:**

Students will be required to use ALEKS in and out of lab. Each student must complete an initial and final assessment, homework sets assigned on material covered in class by the scheduled due dates, and take part in all other activities or assignments given during the required weekly lab period.

**Tests and Final Exam**

There will be four one hour in-class unit exams and a cumulative comprehensive two hour Final Exam. No calculators, phones, or other electronic devices are allowed during exams. **ALL** work must be shown on the test paper for credit.

**Note:** Any student requesting special testing conditions due to disability must provide documentation at the beginning of the semester and make any needed arrangements before the exam.

**Make-Up Exams**  
Make-up exams will only be allowed with ***official documentation*** of an unavoidable absence, and the student must have notified the instructor either **beforehand or within 24 hours** of the exam and scheduled the make-up promptly upon return to campus.

**Lab Participation:** This includes mandatory attendance in lab sessions and completion of lab assignments.

**Resources**

Students are also encouraged to make regular visits during office hours, to meet in study groups, and to use the Learning Resource Center Math Lab and the SI or Math tutors from the School of Science & Technology.