SYLLABUS

DATE OF LAST REVIEW: 02/2013
CIP CODE: 15.1201
SEMESTER: Departmental Syllabus
COURSE TITLE: Applied Math I
COURSE NUMBER: ENGR-0104
CREDIT HOURS: 3
INSTRUCTOR: Departmental Syllabus
OFFICE LOCATION: Departmental Syllabus
OFFICE HOURS: Departmental Syllabus
TELEPHONE: Departmental Syllabus
EMAIL: Departmental Syllabus

KCKCC-issued email accounts are the official means for Electronically communicating with our students.

PREREQUISITE(S): Above 30 on Accuplacer or Math-0099 (Elementary Algebra) & CIST-0101 (Computer Concepts & Applications) or Instructor Permission.

REQUIRED TEXT AND MATERIALS:
Please check with the KCKCC bookstore, http://www.kckccbookstore.com/, for the required texts for your particular class. Calculator: TI-83 or TI-84 (Recommended)

COURSE DESCRIPTION:
A survey of topics relevant to computer technicians that includes: number systems, logic, truth tables, Boolean algebra, base 2 and base 16 representation and circuit reduction. The course will emphasize problem solving techniques.

METHOD OF INSTRUCTION:
A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, and panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE:
I. (Computation)
   A. Exponents and their properties
   B. Calculator “Functions”
   C. Scientific Notation
   D. Introduction to Statistics and Error Analysis
   E. Dimensional Analysis
II. (Binary Numbers)
   A. The Binary System
B. Base Two Arithmetic  
C. Two’s Components  
D. Binary Fractions  
E. Computer Memory and Quantitative Prefixes

III. (Octal and Hexadecimal Numbers)  
A. The Octal System  
B. Hexadecimal Representation  
C. Base 16 Arithmetic  
D. Elements of Coding

IV. (Sets and Algebra)  
A. The Language of Sets  
B. Set Operations  
C. Venn Diagrams  
D. Propositions and Truth Tables  
E. Logical Operations and Internet Searches

V. (Boolean Circuits)  
A. Equivalent Boolean Expressions  
B. Logic Circuits Part 1 - Switching Circuits  
C. Truth Tables and Disjunctive Normal Form  
D. Logic Circuits Part II – Gated Circuits  
E. Karnaugh Maps

VI. (Graphs)  
A. Colors Sets  
B. Hexadecimal RGB Codes  
C. Cartesian and Monitor Coordinates  
D. Elements of Computer Animation

EXPECTED LEARNER OUTCOMES:  
1. Upon completion of the course the student will be able to solve computation problems  
2. Upon completion of the course the student will be able to solve binary number problems  
3. Upon completion of the course the student will be able to solve octal and hexadecimal problems  
4. Upon completion of the course the student will be able to compute basic algebra problems  
5. Upon completion of the course the student will be able to solve Boolean circuit problems  
6. Upon completion of the course the student will be able to solve color set graphs

COURSE COMPETENCIES:  
Upon completion of the course the student will be able to solve computation problems  
1. Exponents and their properties  
2. Scientific Notations  
3. Dimensional Analysis

Upon completion of the course the student will be able to solve binary number problems  
4. Binary System  
5. Base Two Arithmetic  
6. Binary Fractions  
7. Computer Memory & Quantitative Prefixes

Upon completion of the course the student will be able to solve octal and hexadecimal problems  
8. Octal Calculations  
9. Hexadecimal Calculations  
10. Base 16 Arithmetic’s

Upon completion of the course the student will be able to compute basic algebra problems
Upon completion of the course the student will be able to solve Boolean circuit problems
14. Boolean Expressions / Karnaugh Maps
15. Logic Circuits (Switching Circuits)
16. Logic Circuits (Gated Circuits)

Upon completion of the course the student will be able to solve color set graphs
17. Hexadecimal RGB Codes
18. Cartesian and Monitor Coordinates
19. Computer Animation Coordinates

Upon completion of the course the student will understand how math relates to critical thinking.
20. Problem Solving
21. Word problems
22. Diagnostic Skills

ASSESSMENT OF LEARNER OUTCOMES:
Assessment methods may include, but are not limited to, the following: Homework, Assignments, Quizzes, Class Participation, Chapter Tests, and Final Exam. The grading scale and the process for calculating the course grades are to be determined by the individual instructors. This information will be included in each instructor’s syllabus.

SPECIAL NOTES:
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

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