B-2 Required courses outside of Mechanical Engineering

(Note: Syllabi from Mathematics, Chemistry, and Physics are not complete. The college will collect these supplementary materials from these departments and deliver to accreditation office later)

DEPARTMENT: MATHEMATICS	
COURSE #: MAC 2311, 4 credits	**COURSE TITLE**: Calculus with Analytic Geometry I
TYPE COURSE: Required	**TERMS OFFERED:** Fall, Spring, Summer
CATALOG DESCRIPTION: Polynomial, trigonometric, exponential and logarithmic functions; first and second derivatives and their interpretations; definition and interpretation of the integral; differentiation rules; implicit differentiation; applications of the derivative; antiderivatives; fundamental theorem of calculus. This course must be taken for reduced credit by students with prior credit for some of the content.	**PREREQUISITES**: MAC 1147, Precalculus Algebra/ Trigonometry; or MAC 1140, Precalculus Algebra and MAC 1114, Analytic Trigonometry
AREA COORDINATOR: **RESPONSIBLE FACULTY:** Dr. **INSTRUCTOR OF RECORD:** Dr. **DATE OF PREPARATION:** 07/18/02 (AHS)	**CLASS SCHEDULE:**
TEXTBOOKS/REQUIRED MATERIAL: •	**SCIENCE/DESIGN (%):** 100/0 **CONTRIBUTION TO MEETING THE PROFESSIONAL COMPONENT:** 100% mathematics
COURSE TOPICS: 1.	**ASSESSMENT TOOLS:** 1.

COURSE OBJECTIVES*	(Numbers shown in brackets are links to program outcomes) 1.
COURSE OUTCOMES*	(Numbers shown in brackets are links to course objectives listed above) 1.

DEPARTMENT: MATHEMATICS	
COURSE #: MAC 2312, 4 credits	**COURSE TITLE**: Calculus with Analytic Geometry II
TYPE COURSE: Required	**TERMS OFFERED:** Fall, Spring, Summer
CATALOG DESCRIPTION: Techniques of integration; applications of integration; series and Taylor series; differential equations. This course must be taken for reduced credit by students with prior credit for some of the content	**PREREQUISITES**: MAC 2311, Calculus with Analytic Geometry I or MAP 2483, Biocalculus
AREA COORDINATOR: **RESPONSIBLE FACULTY:** Dr. **INSTRUCTOR OF RECORD:** Dr. **DATE OF PREPARATION:** 07/18/02 (AHS)	**CLASS SCHEDULE:**
TEXTBOOKS/REQUIRED MATERIAL: •	**SCIENCE/DESIGN (%):** 100/ 0 **CONTRIBUTION TO MEETING THE PROFESSIONAL COMPONENT:** 100% mathematics
COURSE TOPICS: 1.	**ASSESSMENT TOOLS:** 1.

COURSE OBJECTIVES*	(Numbers shown in brackets are links to program outcomes) 1.
COURSE OUTCOMES*	(Numbers shown in brackets are links to course objectives listed above) 1.

DEPARTMENT: MATHEMATICS	
COURSE #: MAC 2313, 5 credits	**COURSE TITLE**: Calculus with Analytic Geometry III
TYPE COURSE: Required	**TERMS OFFERED:** Fall, Spring, Summer
CATALOG DESCRIPTION: Functions of several variables and their graphical representations; vectors; partial derivatives and gradients; optimization; multiple integration; polar spherical, and cylindrical coordinate systems; curves; vector fields; line integrals; flux integrals; divergence theorem and Stokes' theorem. This course must be taken for reduced credit by students with prior credit for some of the content.	**PREREQUISITES**: MAC 2312, Calculus with Analytic Geometry II
AREA COORDINATOR: **RESPONSIBLE FACULTY:** Dr. **INSTRUCTOR OF RECORD:** Dr. **DATE OF PREPARATION:** 07/18/02 (AHS)	**CLASS SCHEDULE:**
TEXTBOOKS/REQUIRED MATERIAL: •	**SCIENCE/DESIGN (%):** 100/0 **CONTRIBUTION TO MEETING THE PROFESSIONAL COMPONENT:** 100% mathematics
COURSE TOPICS: 1.	**ASSESSMENT TOOLS:** 1.

COURSE OBJECTIVES*	(Numbers shown in brackets are links to program outcomes) 1.
COURSE OUTCOMES*	(Numbers shown in brackets are links to course objectives listed above) 1.

DEPARTMENT: MATHEMATICS	
COURSE #: MAP 3305, 3 credits	**COURSE TITLE**: Engineering Mathematics I
TYPE COURSE: Required	**TERMS OFFERED:** Fall, Spring, Summer
CATALOG DESCRIPTION: Ordinary differential equations, Laplace transform. Linear algebra: determinants, matrices, eigenvalues and eigenvectors. Systems of first-order differential equations.	**PREREQUISITES**: MAC 2313, Calculus with Analytic Geometry III; or MAC 2312, Calculus with Analytic Geometry II with a grade of B or better.
AREA COORDINATOR: **RESPONSIBLE FACULTY:** Dr. **INSTRUCTOR OF RECORD:** Dr. **DATE OF PREPARATION:** 07/18/02 (AHS)	**CLASS SCHEDULE:**
TEXTBOOKS/REQUIRED MATERIAL: •	**SCIENCE/DESIGN (%):** 100/0 **CONTRIBUTION TO MEETING THE PROFESSIONAL COMPONENT:** 100% engineering mathematics
COURSE TOPICS: 1.	**ASSESSMENT TOOLS:** 1.

COURSE OBJECTIVES*	(Numbers shown in brackets are links to program outcomes) 1.
COURSE OUTCOMES*	(Numbers shown in brackets are links to course objectives listed above) 1.

DEPARTMENT: MATHEMATICS	
COURSE #: MAP 3306, 3 credits	**COURSE TITLE**: Engineering Mathematics II
TYPE COURSE: Required	**TERMS OFFERED:** Fall, Spring, Summer
CATALOG DESCRIPTION: Fourier series and Fourier transforms, introduction to partial differential equations.	**PREREQUISITES**: MAC 2313, Calculus with Analytic Geometry III: MAP 2302, Ordinary Differential Equations; or MAP 3305, Engineering Mathematics I. Not open to students having credit in MAP 4341, Elementary Partial Differential Equations I
AREA COORDINATOR: **RESPONSIBLE FACULTY:** Dr. **INSTRUCTOR OF RECORD:** Dr. **DATE OF PREPARATION:** 07/18/02 (AHS)	**CLASS SCHEDULE:**
TEXTBOOKS/REQUIRED MATERIAL: •	**SCIENCE/DESIGN (%):** 100/0 **CONTRIBUTION TO MEETING THE PROFESSIONAL COMPONENT:** 100% engineering mathematics
COURSE TOPICS: 1.	**ASSESSMENT TOOLS:** 1.

COURSE OBJECTIVES*	(Numbers shown in brackets are links to program outcomes) 1.
COURSE OUTCOMES*	(Numbers shown in brackets are links to course objectives listed above) 1.

DEPARTMENT: CHEMISTRY	
COURSE #: CHM 1045, 3 credits	**COURSE TITLE**: General Chemistry I
TYPE COURSE: Required	**TERMS OFFERED:** Fall, Spring, Summer
CATALOG DESCRIPTION: Chemical symbols, formulas, and equations; the states of matter; electronic structure and bonding.	**PREREQUISITES**: MAC 1105, College Algebra, with a grade or "C-" or higher or placement beyond MAC 1105 on the University's math department exam. **COREQUISITES:** CHM 1045L, General Chemistry I Laboratory
AREA COORDINATOR: **RESPONSIBLE FACULTY:** Dr. **INSTRUCTOR OF RECORD:** Dr. **DATE OF PREPARATION:** 07/18/02 (AHS)	**CLASS SCHEDULE:** Lecture, three (3) hours per week, and recitation, one (1) hour.
TEXTBOOKS/REQUIRED MATERIAL: •	**SCIENCE/DESIGN (%):** 100/0 **CONTRIBUTION TO MEETING THE PROFESSIONAL COMPONENT:** 100% chemistry
COURSE TOPICS: 1.	**ASSESSMENT TOOLS:** 1.

COURSE OBJECTIVES*	(Numbers shown in brackets are links to program outcomes) 1.
COURSE OUTCOMES*	(Numbers shown in brackets are links to course objectives listed above) 1.

DEPARTMENT: CHEMISTRY	
COURSE #: CHM 1045L, 1 credits	**COURSE TITLE**: General Chemistry I Laboratory
TYPE COURSE: Required	**TERMS OFFERED:** Fall, Spring, Summer
CATALOG DESCRIPTION: Introduction to chemical laboratory. Topics include stoichiometry, atomic spectra, gases, and acids and bases.	**PREREQUISITES**: **COREQUISITES:** CHM 1045, General Chemistry I
AREA COORDINATOR: **RESPONSIBLE FACULTY:** Dr. **INSTRUCTOR OF RECORD:** Dr. **DATE OF PREPARATION:** 07/18/02 (AHS)	**CLASS SCHEDULE:** Laboratory, three (3) hours per week
TEXTBOOKS/REQUIRED MATERIAL: • Safety goggles and a scientific calculator are required for every class.	**SCIENCE/DESIGN (%):** 100/0 **CONTRIBUTION TO MEETING THE PROFESSIONAL COMPONENT:** 100% chemistry, laboratory experience
COURSE TOPICS: 1.	**ASSESSMENT TOOLS:** 1.

COURSE OBJECTIVES*	(Numbers shown in brackets are links to program outcomes) 1.
COURSE OUTCOMES*	(Numbers shown in brackets are links to course objectives listed above) 1.

PHY2048C: General Physics A

Curriculum Status: **Required** course for Engineering and many Science majors.

Catalog Description: An introduction to mechanics, waves, and thermodynamics. To be taken in association with the laboratory component PHY2048L.

Co-requisite: MAC2311

Text and/or other required material:

Physics for Scientists and Engineers, 5th Edition. By Paul A. Tipler, Freeman Worth.

Course Objectives: At the conclusion of this course, a student should be able to: understand thoroughly the following concepts and laws, know their range of applicability, and how to apply them by being able to set up and answer related physical situations and problems.

Topics covered:

1. Motion in One Dimension
   - Displacement, velocity, and speed. Acceleration. Motion with constant acceleration.
2. Motion in Two and Three Dimensions
   - Properties of vectors. Position, velocity and acceleration. Projectile motion. Uniform circular motion
3. Newton's Laws of Motion
   - Newton's First Law. Force, mass and Newton's Second Law. Force due to gravity: weight. The Fundamental Forces in nature. Problem solving and using Free-Body diagrams. Problems with two or more objects
4. Applications of Newton's Laws
   - Friction. Inclined planes and banked curves.
5. Work and Energy
   - Work and kinetic energy. The dot product. Potential energy
6. Conservation of Energy
   - Conservation of mechanical energy. Mass and energy.
7. Systems of Particles and Conservation of Linear Momentum
   - Center of Mass. Conservation of linear momentum. Impulse. Collisions in 1d, 2d, and 3d. Rocket propulsion
8. Rotation
   - Rotational kinematics, angular velocity and acceleration. Rotational kinetic energy. Moment of inertia. Newton's Second Law for Rotation: Torques. Rolling with and without slipping
9. Conservation of Angular Momentum
   - The cross product. Torque and angular acceleration. Conservation of angular momentum
10. Gravity
    - Kepler's Laws. Newton's Law of Gravity. Gravitational potential energy
11. Static Equilibrium and Elasticity
    - The Center of Gravity. Conditions for static equilibrium. Couples. Stress and Strain
12. Fluids
    - Density. Pressure in a fluid. Buoyancy and Archimedes' Principle. Fluids in motion: Bernoulli's Equation
13. Oscillations
    - Simple harmonic motion. Energy in SHM. Oscillating systems, vertical spring, simple pendulum. Damped oscillations. Driven oscillations and resonance.
14. Wave Motion
    - Transverse and longitudinal waves. Speed of waves. Harmonic waves on a string.

Sound waves. Wave intensity. The Doppler Effect. Superposition and standing waves on strings. Standing sound waves in open and closed pipes.

15. Temperature and the Kinetic Theory of Gases
    - The Celsius and Fahrenheit temperature scales. Absolute temperature scale. The Ideal Gas Law. The Kinetic Theory of Gases.
16. Heat and the First Law of Thermodynamics
    - Heat capacity and specific heat. Change of phase and latent heat. Joule's experiment. The internal energy of an ideal gas. Work and the PV diagram for a gas. Heat capacities for gases and the equipartition theorem.
17. The Second Law of Thermodynamics
    - Heat engines. Refrigerators. The Carnot engine. Entropy.
18. Thermal Properties and Processes
    - Thermal expansion. Transfer of thermal energy, conduction, convection and radiation.

Class Schedule: Two 75 minute lectures per week, one 50 minute tutorial or recitation class, and one 3 hour laboratory session (see separate PHY2048L sheet). (5 credit hours)

Contribution to meeting professional component: 5 credit hours (to be taken in association with PHY2048L)

Relationship of course to program outcomes:

Prepared by: Dr. Mark. A. Riley (FSU Department of Physics) **Date:** April 28, 2003

PHY2048L: General Physics A Laboratory

Curriculum Status: **Required** course for Engineering and many Science majors.

Catalog Description: Laboratory course to be taken in associated with PHY2048C, an introduction to mechanics, waves, and thermodynamics

Co-requisite: MAC2311

Text and/or other required material:

PHY2048L laboratory manual downloadable from the course webpage.

Course Objectives: At the conclusion of this course, a student should have gained hands-on experience with laboratory apparatus and techniques, to have developed skills in setting up and performing experiments, and to have learned common methods for analyzing scientific data, including the use of a modern computer spreadsheet.

Topics or laboratory experiments covered include:

1. Estimates for the reliability of measurements. Elements of statistical inference. Least squares adjustment of data
2. Vectors
3. Measuring the density of various objects
4. Introduction to the use of a computer spreadsheet
5. Measuring the acceleration due to gravity
6. Collisions and the conservation of linear momentum
7. Centripetal force and circular motion
8. Torques and static equilibrium
9. Simple harmonic motion and Hooke's Law
10. The Ideal Gas Law
11. Measuring the specific heat of different substances
12. Waves and resonances

Class Schedule: One 3 hour laboratory session. (0 credit hours)

Contribution to meeting professional component: 5 credit hours when taken in association with PHY2048C (see separate sheet)

Relationship of course to program outcomes:

Prepared by: Dr. Mark. A. Riley (FSU Department of Physics) **Date:** April 28, 2003

PHY2049C: General Physics B

Curriculum Status: **Required** course for Engineering and many Science majors.

Catalog Description: An introduction to electricity, magnetism, and optics. To be taken in association with the laboratory component PHY2049L.

Pre-requisite: PHY2048C

Text and/or other required material:

Physics for Scientists and Engineers, 4th Edition. By Paul A. Tipler, Freeman Worth.

Course Objectives: At the conclusion of this course, a student should be able to: understand thoroughly the following concepts and laws, know their range of applicability, and how to apply them by being able to set up and answer related physical situations and problems.

Topics covered:

1. The Electric Field
   - Electric charge, quantization and conservation. Conductors and insulators. Coulomb's Law. Electric field lines. Motion of point charges in electric fields. Electric dipoles in electric fields. Calculating the electric field from Coulomb's Law and Gauss' s Law.
2. Electric Potential
   - Potential difference. Potential due to a system of point charges. Computing the electric field from the potential. Calculation of V for continuous charge distributions, for example, charged ring, uniform charged disk, infinite plane, solid and hollow charged spheres, infinite line of charge. Equipotential surfaces. Van de Graff Generator. Dielectric breakdown.
3. Electrostatic Energy and Capacitance
   - Electrostatic potential energy. Capacitors. Storage of electrical energy. Capacitors, batteries and circuits. Dielectrics and the molecular view of a dielectric.
4. Electric Current and Direct-Current Circuits
   - Motion of charges. Resistance and Ohm's Law. Energy in electrical circuits, emf and batteries. Resistors in series and parallel. Kirchoff's Rules. RC circuits, charging and discharging capacitors.
5. The Magnetic Field
   - The force exerted by a magnetic field. Motion of a point charge in a magnetic field. Torques on current loops and magnets. The Hall Effect.
6. Sources of Magnetic Fields
   - Magnetic field due to moving point charges. The magnetic field due to electrical current: the Biot-Savart Law. B due to, current loop, solenoid, straight wire. Gauss's Law for Magnetism. Ampere's Law. Magnetism in matter, atomic magnetic moments, paramagnetism, ferromagnetism and diamagnetism.
7. Magnetic Induction
   - Magnetic flux. Induced emf and Faraday's Law. Lenz's Law. Motional emf. Eddy currents. Mutual and self inductance. Magnetic energy. RL circuits. Magnetic properties of superconductors, Meissner effect.
8. Alternating-Current Circuits
   - ac Generators. ac in a resistor, rms values. ac circuits, inductors and capacitors. Phasors. RLC circuits and resonance. The transformer.
9. Maxwell's Equations and Electromagnetic Waves
   - Maxwell's equations. Electromagnetic waves. The electromagnetic spectrum. Production of electromagnetic waves, electric dipole radiation.
10. Properties of Light

- Wave-particle duality. Sources of light, line spectra, absorption, scattering and stimulated emission. Lasers. The speed of light. Reflection and refraction. Total internal reflection. Polarization of light.

11. Optical Images
    - Plane and spherical mirrors. Ray diagrams for mirrors. Converging and diverging lenses. Thin lens formula. Ray diagrams for lenses. Combinations of lenses. Optical instruments, the eye, the simple magnifier, the compound microscope, the telescope.
12. Interference and Diffraction
    - Phase difference and coherence. Interference in thin films. The two slit interference pattern. Diffraction pattern of a single slit. Diffraction and resolution. Diffraction gratings. Holograms.

Class Schedule: Two 75 minute lectures per week, one 50 minute tutorial or recitation class, and one 3 hour laboratory session (see separate PHY2049L sheet). (5 credit hours)

Contribution to meeting professional component: 5 credit hours (to be taken in association with PHY2049L)

Relationship of course to program outcomes:

Prepared by: Dr. Mark. A. Riley (FSU Department of Physics) **Date:** April 28, 2003

PHY2049L: General Physics B Laboratory

Curriculum Status: **Required** course for Engineering and many Science majors.

Catalog Description: Laboratory course to be taken in associated with PHY2049C, an introduction to electricity, magnetism, and optics.

Prerequisite: PHY2048C

Text and/or other required material:

PHY2049L laboratory manual downloadable from the course webpage.

Course Objectives: At the conclusion of this course, a student should have gained hands-on experience with laboratory apparatus and techniques, to have developed skills in setting up and performing experiments, and to have learned common methods for analyzing scientific data, including the use of a modern computer spreadsheet.

Topics or laboratory experiments covered include:

1. Distribution functions and data analysis
2. Electric and magnetic Fields
3. Ohm's Law and resistor circuits
4. Construction of an ammeter and voltmeter
5. Null Comparator instruments, the potentiometer and the Wheatstone bridge.
6. Using a current balance to measure the permeability of free space.
7. The oscilloscope, to observe and measure fast periodic electrical voltages.
8. Currents and voltages in RC and RL circuits
9. Currents and voltages in RLC circuits and resonance
10. Studying the basic properties of light using a laser. Reflection (including total internal reflection), refraction, interference and diffraction, and also polarization.
11. Optical instruments I. Techniques for measuring the focal length of a lens. Virtual images and the parallax method.
12. Optical instruments II. Studying the object and image relationships for some simple optical systems, Galilean telescope. Testing Newton's equation for a thick lens system.
13. Using a diffraction grating and a spectrometer to analyze the characteristic emission spectra of certain gases.

Class Schedule: One 3 hour laboratory session. (0 credit hours)

Contribution to meeting professional component: 5 credit hours when taken in association with PHY2049C (see separate sheet)

Relationship of course to program outcomes:

Prepared by: Dr. Mark. A. Riley (FSU Department of Physics) **Date:** April 28, 2003

EGN 1004L – First Year Engineering Laboratory

Curriculum Status: Required course for all engineering students in their freshman year

Catalog Information: This course will focus on "how things work", "computer-aided problem solving" and "student responsibility". Products and processes to be selected for "how things work" may include light bulbs, clocks and watches, computers and microprocessors, refrigerators, bridges, task scheduling, video tapes, copying machines, and product packaging. Students will spend about two weeks on each product/process, sketching and drawing pertinent diagrams by hand, and learning relevant history and engineering concepts.

Co-requisite: NA

Textbook: NA. However, students may be required to acquire copies of needed materials along the way.

Course Objective: Students will be introduced to engineering by spending about two weeks on each of the selected products/processes, sketching and drawing pertinent diagrams by hand and taking apart some of the components. Students will also perform basic assignments on relevant engineering concepts, history and design, and produce reflective essays and reports on the products and processes.

Topics covered:

1. General
   - 1.1 Introduction to student services
   - 1.2 General method of product design
     - Use of morphological chart
   - 1.3 Project scheduling method
     - Introduction to CPM and use of MS Project
   - 1.4 General Design Project: J-stick
2. Chemical Engineering Module
   - 2.1 Introduction to chemical engineering
   - 2.2 Buoyancy experiment
3. Civil/Environmental Engineering Module
   - 3.1 Introduction to civil/environmental engineering
   - 3.2 Principles of foundations, bridges, highways and safety with detailed examples. Case study: Leaning tower of Pisa
4. Electrical & Computer Engineering Module
   - 4.1 Introduction to electrical & computer engineering
   - 4.2 Number systems, circuits, Boolean algebra and gates
5. Industrial & Manufacturing Engineering Module
   - 5.1 Introduction to industrial & manufacturing engineering
   - 5.2 Quality and statistics. Catapult experiment
6. Mechanical Engineering Module
   - 6.1 Introduction to mechanical engineering
   - 6.2 Videotape project.
   - 6.3 Presentation on NASA and the Colombia shuttle
7. Presentation of General Design Project

Class Processes: The class will meet once per week, and each class meeting will last two hours fifteen minutes (135 minutes) approximately. About half of class time will be spent by the instructor discussing and explaining relevant "student learning tasks" (SLT). The remainder of class time will be spent by students performing relevant SLT's. Each instructor will also conduct a tour of some departmental labs. A basic class rule is "Be Professional At All Times". This rule is expected to be followed in all class interactions among students and instructors. Representatives of student professional societies may be invited to make 5-minute presentations.

General Design Project: A suitable design project will be given by the second week of classes with due date three weeks from the date of assignment.

Course www site: Some course information will be posted at campus.fsu.edu. To access this web site, each student is required to have an "engineering account" by the end of the second week of classes.

Instructors: A team of instructors, at least one from each academic department of the College, will teach this course, with coordination supplied by Dr. Samuel Awoniyi; E-mail: awoniyi@eng.fsu.edu, and Dr. Adnan Bashir bashir@eng.fsu.edu

EEL 3003 Introduction to Electrical Engineering

Course Objective: EEL 3003. Introduction to Electrical Engineering (3 credit hours). Intro to electrical engineering concepts for non-electrical engineering majors. Covers a broad range of current electrical engineering topics. Prerequisites: MAC 3112; PHY 3049C. Presented in three modules:

Module One: Basic Circuit Theory and Steady State DC Circuit Analysis
Module Two: AC Circuit Analysis and First Order DC Transient Analysis
Module Three: Diodes, Semiconductors, Op-Amps and Introduction to Computers

Instructor: W. R. Tucker, FAMU-FSU COE, Rm. B371. Phone: 410-6471 e-mail: wtucker@eng.fsu.edu
Office Hours: 11:30AM - 1:00PM Monday and Wednesday. Other times ***by appointment, only***. If you go by my office, and the door is open, please feel free to drop-in. If my door is closed, then I am either with another student, or I am not in. Please note that I work a full time job outside of the college. I will seldom be available except during the above times, unless you arrange an appointment ahead of time.
Text: Electrical Engineering Principles and Applications; Hambley; 2nd Ed., 2002, ISBN 0-13-061070-4.

Class Policies: All FAMU, FSU and College of Engineering guidance, regulations, letters and memos related to policies on classroom conduct, absences, tardiness, cheating, eating, drinking, drugs, weapons, musical appliances, telephones, beepers, etc., apply. Pay attention. Take notes. Ask questions. Stay awake.

Attendance: If you don't attend my lectures, you will not do well in this class! See your respective University's policy on attendance. It applies. Be on time. If you need to sleep, leave. You will be more comfortable somewhere else. Be attentive in class – don't work on other assignments during my class. If you have a valid excuse (documented) for missing a class, you are still responsible for any work missed.

Exams & Quizzes: Three one-hour exams will be given in class throughout the semester. Makeup exams will NOT be given without prior written approval following the procedure outlined in the ECE Department letter on "EEL-3003 Makeup Examination and Procedure", dated 28 August 2001. If you become aware that you are going to miss an examination, you need to see me as soon as you can. Missing an exam is very hard on us both. See your university's policy on attendance, makeup work and exceptions to the examination policy. A comprehensive final exam will be given during the scheduled final exam period at the end of the semester. Short in-class quizzes and group problems will be completed periodically throughout the semester. The purpose of these quizzes and group problems is to encourage class attendance, to allow you to discuss the material with your classmates, and ultimately to enhance your comprehension of the material.

Grading: Your final grade for this course will be based upon your performance on homework, module exams, class participation and the final exam. I will use an absolute scale of A=100-90, B=89-80, C=79-70, D=69-60, F=59 or lower. Points will be accumulated in accordance with the following:

Homework	25%	=	25 Points
Participation	5%	=	5 Points
Exams	25% each	=	75 Points
Final Exam	25%	=	25 Points

Homework will be assigned and graded weekly. The number of points accumulated will be 25% of your grade.
Participation points are earned through class lecture and problem solving session attendance and "extra-credit"/quiz work that you might perform. The number of points accumulated will count for 5% of your grade.
The three planned module exams will account for 75% of your grade (25% for each) for the semester.
The comprehensive final exam will/can be used to replace a lower score that you may have achieved during the semester, if it is to your advantage to do that.

Homework: If you don't do the homework, you **will probably not do well** in this class**!** The purpose of homework in this course is to give you practice in solving problems and to amplify concepts introduced in

the lecture. Homework assignments (see schedule) are due at the beginning of class on the due date shown on the course schedule. ***Late homework will not be accepted.***

I encourage you to discuss the general methods of working out the problems with each other. However, there is a fine line between comparing techniques and copying techniques. If you do not understand this distinction, please ask me. If you do discuss the general methods of solving a particular problem with another classmate, you should acknowledge that person by name at the beginning of your solution.

The following are **mandatory** guidelines for you to use in submitting your homework assignments. Since they are mandatory, if you fail to follow them, you may experience deductions from your homework grade, or even rejection of your submission:

1. Turn in homework assignments by the end of the class period that they are due. If you know you are going to be absent, you MUST turn in your homework assignment BEFORE the beginning of class to receive credit.
2. Write on one side of the page only. Solve only one problem per page. Number each page.
3. Put your initials on every page. Show all of your work, to substantiate your answer.
4. Box all final answers; double underline important intermediate results. Include units.
5. Be neat, make sure your paper is legible. Don't use raggedy spiral notebook paper.
6. Staple your pages together correctly, and fold assignments lenghtwise.
7. On the outside of your folded homework, write the following, with the fold to the left:
   Your Name, Your last 4
   EEL-3003 Homework #
   Date

The following are **suggested** guidelines for you to use in preparing your homework solutions. They are meant to help you organize your solutions and maximize your understanding of what you are doing.

1. State the problem. Include diagrams with labels. Solve the problem. Check your results.
2. Draw diagrams whenever possible, even when not requested in the problem. A diagram quickly summarizes the problem, and will be helpful when reviewing for exams.
3. Be neat! Remember, your homework is a presentation of your work. It should reflect the careful and deliberate thought process that you have gone through to create your solutions.
4. Keep a working notebook of your solutions, along with any posted solutions that provide. This will be a great study tool for exams, and could be useful in any discussions that we might have about your performance on a particular assignment.

Homework Assignments – Many of the homework assignments are taken from the Hambley text. Other assigments may be made throughout the semester at my discretion. All homework assignements will be posted on the course webpage. I will make solutions of these assignments available.

Homework Grading – Each homework problem will be given a grade of 0, 1, or 2. Zero's (0) are for problems which are either not done or show no general understanding of the problem. A one (1) is for problems which show general understanding, but is missing a key aspect of the solution. Two's (2) will be given to those problems which are essentially correct. You do NOT have to have an EXACT or PERFECTLY CORRECT solution to get a two. I will attempt to have the homeworks graded and returned to you as quickly as I can, but there are no guarantees. Make sure that you understand the published solutions.

DEPARTMENT: ELECTRICAL ENGINEERING	
COURSE #: EEL 3003L, 1 credits	**COURSE TITLE**: Introduction to Electrical Engineering Laboratory
TYPE COURSE: Required	**TERMS OFFERED:** Fall, Spring, Summer
CATALOG DESCRIPTION: Laboratory in support of EEL 3003. Must be taken concurrently with first enrollment in EEL 3003. Must be dropped if EEL 3003 is dropped	**PREREQUISITES**: MAC 2312, Calculus II; PHY 2049C, Physics II with Lab. **COREQUISITES:** EEL 3003 Introduction to Electrical Engineering
AREA COORDINATOR: **RESPONSIBLE FACULTY:** **INSTRUCTOR OF RECORD:** William Tucker **DATE OF PREPARATION:** 7/18/02 (AHS)	**LABORATORY SCHEDULE:** Once weekly for 2 hrs. and 45 min.
TEXTBOOKS/REQUIRED MATERIAL: •	**SCIENCE/DESIGN (%):** 100/0 **CONTRIBUTION TO MEETING THE PROFESSIONAL COMPONENT:** 100% engineering science, laboratory experience
COURSE TOPICS: 1.	**ASSESSMENT TOOLS:** 1.

COURSE OBJECTIVES*	(Numbers shown in brackets are links to program outcomes) 1.
COURSE OUTCOMES*	(Numbers shown in brackets are links to course objectives listed above) 1.