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ABSTRACT

This document contains descriptions of adult education courses in remediation, general education, and technical mathematics. They are part of a program developed by the Machine Tool Advanced Skills Technology Educational Resources (MASTER) program to help workers become competent in the skills needed to be productive workers in the machine tools industry. Eight course descriptions are included in the remediation program: adult literacy, college preparatory reading I and II, writing skills I and II, basic mathematics, and beginning algebra I and II. Descriptions are provided for the following 11 general education courses and technical mathematics courses: oral and written communications, introduction to technical communications, interpersonal communications, composition I, college algebra, plane trigonometry, occupational mathematics, fundamentals of physics, human relations, college success skills, and general psychology. Each course description includes a short overview, prerequisites, course objectives, required course materials, course outline, and Secretary's Commission on Achieving Necessary Skills (SCANS) activities.

*a consortium of educators and industry*

# EDUCATIONAL RESOURCES FOR THE MACHINE TOOL INDUSTRY



## Remediation, General Education and Technical Mathematics





*Supported by the National Science Foundation's Advanced Technological Education Program*

MACHINE TOOL ADVANCED SKILLS TECHNOLOGY EDUCATIONAL RESOURCES

MASTER

*a consortium of educators and industry*

# EDUCATIONAL RESOURCES FOR THE MACHINE TOOL INDUSTRY

# Remediation, General Education and Technical Mathematics



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**National Science Foundation**
**Advanced Technological Education Program**

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National Science Foundation - Division of Undergraduate Education
MASTER Consortia of Employers and Educators

*MASTER has built upon the foundation which was laid by the Machine Tool Advanced Skills Technology (MAST) Program. The MAST Program was supported by the U.S. Department of Education - Office of Vocational and Adult Education. Without this prior support MASTER could not have reached the level of quality and quantity that is contained in these project deliverables.*

**MASTER DEVELOPMENT CENTERS**
Augusta Technical Institute - Central Florida Community College - Itawamba Community College - Moraine Valley Community College - San Diego City College (CACT) - Springfield Technical Community College - Texas State Technical College

**INDUSTRIES**
AB Lasers - AIRCAP/MTD - ALCOA - American Saw - AMOCO Performance Products - Automatic Switch Company - Bell Helicopter - Bowen Tool - Brunner - Chrysler Corp. - Chrysler Technologies - Conveyor Plus - Darr Caterpillar - Davis Technologies - Delta International - Devon - D. J. Plastics - Eaton Leonard - EBTEC - Electro-Motive - Emergency One - Eureka - Foster Mold - GeoDiamond/Smith International - Greenfield Industries - Hunter Douglas - Industrial Laser - ITT Engineered Valve - Kaiser Aluminum - Krueger International. - Laser Fare - Laser Services - Lockheed Martin - McDonnell Douglas - Mercury Tool - NASSCO - NutraSweet - Rapistan DEMAG - Reed Tool - ROHR, International - Searle - Solar Turbine - Southwest Fabricators - Smith & Wesson - Standard Refrigeration - Super Sagless - Taylor Guitars - Tecumseh - Teledyne Ryan - Thermal Ceramics - Thomas Lighting - FMC, United Defense - United Technologies Hamilton Standard

**COLLEGE AFFILIATES**
Aiken Technical College - Bevil Center for Advanced Manufacturing Technology - Chicago Manufacturing Technology Extension Center - Great Lakes Manufacturing Technology Center - Indiana Vocational Technical College - Milwaukee Area Technical College - Okaloosa-Walton Community College - Piedmont Technical College - Pueblo Community College - Salt Lake Community College - Spokane Community College - Texas State Technical Colleges at Harlington, Marshall, Sweetwater

**FEDERAL LABS**
Jet Propulsion Lab - Lawrence Livermore National Laboratory - L.B.J. Space Center (NASA) - Los Alamos Laboratory - Oak Ridge National Laboratory - Sandia National Laboratory - Several National Institute of Standards and Technology Centers (NIST) - Tank Automotive Research and Development Center (TARDEC) - Wright Laboratories

**SECONDARY SCHOOLS**
Aiken Career Center - Chicopee Comprehensive High School - Community High School (Moraine, IL) - Connally ISD - Consolidated High School - Evans High - Greenwood Vocational School - Hoover Sr. High - Killeen ISD - LaVega ISD - Lincoln Sr. High - Marlin ISD - Midway ISD - Moraine Area Career Center - Morse Sr. High - Point Lamar Sr. High -

Pontotoc Ridge Area Vocational Center - Putnam Vocational High School - San Diego Sr. High - Tupelo-Lee Vocational Center - Waco ISD - Westfield Vocational High School

## ASSOCIATIONS

American Vocational Association (AVA) - Center for Occupational Research and Development (CORD) - CIM in Higher Education (CIMHE) - Heart of Texas Tech-Prep - Midwest (Michigan) Manufacturing Technology Center (MMTC) - National Coalition For Advanced Manufacturing (NACFAM) - National Coalition of Advanced Technology Centers (NCATC) - National Skills Standards Pilot Programs - National Tooling and Machining Association (NTMA) - New York Manufacturing Extension Partnership (NYMEP) - Precision Metalforming Association (PMA) - Society of Manufacturing Engineers (SME) - Southeast Manufacturing Technology Center (SMTC)

## MASTER PROJECT EVALUATORS

Dr. James Hales, East Tennessee State University and William Ruxton, formerly with the National Tooling and Machine Association (NTMA)

## NATIONAL ADVISORY COUNCIL MEMBERS

The National Advisory Council has provided input and guidance into the project since the beginning. Without their contributions, MASTER could not have been nearly as successful as it has been. Much appreciation and thanks go to each of the members of this committee from the project team.
Dr. Hugh Rogers-Dean of Technology-Central Florida Community College
Dr. Don Clark-Professor Emeritus-Texas A&M University
Dr. Don Edwards-Department of Management-Baylor University
Dr. Jon Botsford-Vice President for Technology-Pueblo Community College
Mr. Robert Swanson-Administrator of Human Resources-Bell Helicopter, TEXTRON
Mr. Jack Peck-Vice President of Manufacturing-Mercury Tool & Die
Mr. Don Hancock-Superintendent-Connally ISD

## SPECIAL RECOGNITION

Dr. Hugh Rogers recognized the need for this project, developed the baseline concepts and methodology, and pulled together industrial and academic partners from across the nation into a solid consortium. Special thanks and singular congratulations go to Dr. Rogers for his extraordinary efforts in this endeavor.

Dr. Don Pierson served as the Principal Investigator for the first two years of MASTER. His input and guidance of the project during the formative years was of tremendous value to the project team. Special thanks and best wishes go to Dr. Pierson during his retirement and all his worldly travels.

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***All findings and deliverables resulting from MASTER are primarily based upon information provided by the above companies, schools and labs. We sincerely thank key personnel within these organizations for their commitment and dedication to this project. Including the national survey, more than 2,800 other companies and organizations participated in this project. We commend their efforts in our combined attempt to reach some common ground in precision manufacturing skills standards and curriculum development.***

## MASTER DEVELOPMENT CENTER
**Texas State Technical College**

**Texas State Technical College System**
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**Manufacturing in Texas**

Economic trends have led Texas officials to recognize the need to better prepare workers for a changing labor market. The downturn in the oil, natural gas, ranching and farming industries during the last decade diminished the supply of high-paying, low-skill jobs. Growth in Texas is occurring in the low paying, low skills service industry and in the high skills, high paying precision manufacturing industry. In Texas, projected increases by the year 2000 include 4,050 jobs for machine mechanics (24% growth rate); 4,700 jobs for machinists (18% growth rate); 3,850 numeric control operators (20% growth rate); and 107,150 general maintenance repair technicians (23% growth rate). The National Center for Manufacturing Sciences (NCMS) identified that of the top twenty manufacturing states, Texas experienced the largest increase in manufacturing employment. Manufacturing will add over 70,000 additional jobs in Texas by the year 2000 with increases in both durable and non-durable goods.

**Texas State Technical College (TSTC)**

Texas State Technical College System (TSTC) is authorized to serve the State of Texas through excellence in instruction, public service, research, and economic development. The system's efforts to improve the competitiveness of Texas business and industry include centers of excellence in technical program clusters on the system's campuses and support of educational research commercialization initiatives. Through close collaboration with business, industry, governmental agencies, and communities, including public and private secondary and postsecondary educational institutions, the system provides an articulated and responsive technical education system.

In developing and offering highly specialized technical programs and related courses, the TSTC system emphasizes the industrial and technological manpower needs of the state. Texas State Technical College is known for its advanced or emerging technical programs not commonly offered by community colleges.

New, high performance manufacturing firms in areas such as plastics, semiconductors and aerospace have driven dynamic change in TSTC's curriculum. Conventional metal fabrication to support oil and heavy manufacturing remains a cornerstone of the Waco campus and is a primary reason TSTC took the lead in developing new curricula for machining and manufacturing engineering technology in the MAST program.

**Development Team**

- **Principal Investigator**: Wallace Pelton served as the primary administrator and academic coordinator for the MASTER project.
- **Subject Matter/Curriculum Expert**: Steven Betros, Site Coordinator, was responsible for developing skill standards and course/program materials for the conventional machining, mold making and manufacturing engineering technology components of the MASTER project.

## Remediation Courses

Today's young people need new and higher level skills to function effectively in contemporary society. These skills not only include the three R's – reading, writing and arithmetic – but also include higher order thinking skills, problem-solving skills, the ability to integrate and apply knowledge, and to work cooperatively with others.

Many secondary schools across the nation address these skills; some even integrate practical workplace applications to reinforce the learning process. Nearly all offer remediation of some sort in the junior and senior years, and most states have an entry level testing requirement for state supported colleges and universities, either prior to entry, or at least after a certain number of minimum course hours. The MASTER Career Action Plan addresses these remediation processes.

Although some new students arrive with all the skills and knowledge necessary to start college, many still lack a basic platform upon which to build. This section includes that remediation designed for community and technical colleges.

Today's jobs can no longer be filled with individuals who possess only technical skills. With greater demands on the shop floor (computer control, smart machines, team management, and greater emphasis on quality), the worker of today must possess greater communication, reading, writing, and mathematic skills than his counterpart 10 to 20 years ago.

MASTER has identified a tremendous void between where workers "need to be" and where entry-level young people "really are." To become part of the solution to this ever-growing problem, MASTER project staffs have worked with industry and faculty (secondary and postsecondary) to develop this collection of remediation courses. Many courses have been pilot tested and have proven to raise the basic reading, writing and communication skills of the students who have taken these courses.

MASTER realizes that a student who enrolls in and passes these courses will certainly not have all of the skills required for successful employment. However, they will have placed themselves in a position to continue to grow and learn for years in the future.

These courses are intended to be used for simply "taking up the slack" in what students have learned in the past and what they need to survive in today's workplace.

Each of these courses includes "SCANS" activities which have been identified by the Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor. The Secretary's Commission has identified in its ***AMERICA 2000 REPORT*** that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities needed for solid job performance.

Our goal, in presenting these remediation courses, is that they may be used as a resource for training and equipping a better, smarter workforce.

## General Education Courses

Today's technology has created an information revolution. As machines become smarter, the employees who will use or operate these machines must also become smarter. Simply possessing good technical (hands-on) skills will not guarantee success in today's job market. The workplace of today demands that its operators are fully competent technicians. Also, front line managers must possess a much higher level of academic skills than was once thought necessary. This means that everyone involved in education must focus more on the "three R's" (reading, writing and arithmetic). America went through a period when they divided students into two groups: "College Bound" and "Vocational." This philosophy seemed to work well for many years, but with computer controlled machines and systems now commonplace on the shop floor, today's workers find more needs for reading, writing and doing manufacturing related computations. With the emphasis on total quality assurance and team management, a young person entering the workforce must possess good reading, writing and communication skills to survive and advance up through the ranks.

MASTER has written each of the general education course syllabi for use in vocational/industrial training/educational colleges. Each of the course syllabi includes SCANS activities which may be useful in helping to foster some leadership traits which were found desirable by companies when the industrial interviews were conducted.

# REMEDIATION COURSES

| Course | Title | Credit Hours |
|---|---|---|
| READING 010 | Adult Literacy Program | 3 |
| READING 020 | College Preparatory Reading I | 3 |
| READING 030 | College Preparatory Reading II | 3 |
| ENGLISH 010 | Writing Skills I | 2 |
| ENGLISH 020 | Writing Skills II | 3 |
| MATH 050 | Basic Mathematics | 3 |
| MATH 060 | Beginning Algebra I | 3 |
| MATH 070 | Beginning Algebra II | 3 |

# REA 010

# MASTER PROGRAM

## Adult Literacy Program

### Course Syllabus

**Lecture hours/week: 12** **Lab hours/week: 72** **Credit hours: 3**

COURSE DESCRIPTION:

A comprehensive language arts literacy program for adults with significant reading difficulties and dyslexic characteristics. Emphasis is on decoding, comprehension, and structure of the written language. Additional components include cursive writing, spelling, and written expression.

PREREQUISITES: **Entry is by placement and/or diagnostic testing instruments or by referral of the counseling staff**

REQUIRED COURSE MATERIALS:

**Recommended Textbook:** Texas Scottish Rite Hospital Literacy Program (Dallas, Texas), Educators Publishing Services, Inc., Cambridge, Massachusetts. Latest Edition

| | |
|---|---|
| Workbook 1 | Lessons 1-25 |
| Workbook 2 | Lessons 26-60 |
| Workbook 3 | Lessons 61-100 |
| Workbook 4 | Lessons 101-160 |

**Supplies:** Linkage Paper (81/2" x 14"), 35 sheets per pad
Student kit (includes alphabet letters, colored cubes, and pencil grips)

COURSE OBJECTIVES:

The student will:

1. decode written language through word attack skills by using phonological awareness, structural analysis, and contextual clues;
2. determine word origins and word history through the use of a dictionary;
3. identify the main idea and supporting details;
4. sequence events correctly;
5. identify and perceive cause and effect relationships;

6. evaluate and make critical analysis of given information;
7. infer and draw logical conclusions;
8. make generalizations;
9. predict future events and outcomes;
10. follow written directions involving subordinate steps;
11. use parts of a book;
12. use reading aids;
13. use graphic sources;
14. use standard reference books;
15. apply the correct formation of letters in cursive writing; and,
16. express thoughts in writing.

## LECTURE (CONTENT)

This course contains 160 videotape lessons with students responding to the lessons as instructed by the therapist on the tape. The attending teacher has a leadership/supervisory role and is responsible for program sequencing, record keeping, and maintaining an environment that is conducive to learning.

**Total Lecture Hours 12**

## LABORATORY (CONTENT)

Students are scheduled for six hours of laboratory instruction each week throughout the quarter semester.

Daily Lesson Plans: (Lessons 1-100)
- Alphabet and Sound System
- New Learning (Work Attack)
- Reading
- Handwriting (Lesson 1-50)
- Spelling
- Review
- Listening Comprehension

Daily Lesson Plans: (Lessons 101-135)
- Dictionary and Reference Skills
- New Learning
- Reading
- Spelling (high frequency and learned words)
- Review
- Reading Comprehension

Daily Lesson Plans: (Lessons 136-160)
Closure and Practice
Reading
Spelling with Writing
Spelling with common words
Writing
Review
Reading Comprehension

**Total Lab Hours 72**

## COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

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The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES
- A. *Resources: Identifies, organizes, plans, and allocates resources*
  1. follows a schedule to complete assigned tasks on time
  2. requests appropriate sequential video tapes and materials as required
  3. provides self-evaluation of progress through student workbooks
- B. *Interpersonal: Works with others*
  1. works with diversity through interaction with class members of varied ethnic, religious, and social backgrounds
- C. *Information: Acquires and uses information*
  1. completes assignments in workbooks and evaluates individual performance
  2. completes sequential workbook assignments
  3. interprets workbook assignments and communicates through individual and group participation

II. FOUNDATION SKILLS
- A. *Basic Skills: Reads, writes, performs arithmetic and mathematical operations, listens, and speaks.*

1. ***Reading:*** *Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*
   a. reads and interprets appropriate level material within a self-paced program
   b. interprets reading assignments
   c. interprets graphical information
2. ***Writing:*** *Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*
   a. completes required reading assignments
   b. takes class notes
3. ***Listening:*** *Receives, attends to, interprets, and responds to verbal messages and other cues*
   a. responds to verbal messages
   b. confirms verbal message interpretations with instructor and peers
   c. makes appropriate behavior responses to verbal messages
   d. participates in discussion and identification of the difference between listening and hearing
4. ***Speaking***: Organizes ideas and communicates orally
   a. participates in classroom discussions
   b. organizes ideas and communicates specific questions to the instructor
   c. verbally affirms understanding of a concept, procedure, or required skill

B. ***Thinking Skills:*** *Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons.*
1. ***Creative Thinking***: *Generates new ideas*
   a. participates in the "brain-storming" process
   b. participates in group problem solving process
   c. practices the team approach to problem solving
2. ***Decision Making:*** *Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*
   a. identifies personal goals
   b. identifies actions required to accomplish personal goals
3. ***Problem Solving:*** *Recognizes problems and devises and implements plan of action*
   a. makes daily accommodations to stay on schedule
   b. seeks additional instruction/clarification for assignment completion
   c. balances social and academic life/responsibilities
   d. accepts responsibility

4. ***Seeing Things In the Mind's Eye:*** *Organizes and processes symbols, pictures, graphs, objects, and other information*
   a. interprets non-verbal communication in the classroom

C. ***Personal Qualities:*** *Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty.*
   1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
      a. attends class and completes daily course requirements
   2. ***Self-Esteem:*** *Believes in own self-worth and maintains a positive view of self*
      a. instructor provides positive reinforcement and feedback permitting a positive projection of self
   3. ***Sociability:*** *Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
      a. develops effective communication across cultures
      b. interacts with peers and listens effectively and provides constructive criticism
   4. ***Self-Management:*** *Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
      a. monitors/assesses personal goal progress
   5. ***Integrity/Honesty:*** *Chooses ethical courses of action*
      a. meets specific criteria standards to successfully complete the course
      b. encouraged to accept ethical and honest courses of action set by example

REA 010
01/041398

# REA 020

# MASTER PROGRAM

## College Preparatory Reading I

Course Syllabus

**Lecture hours/week: 24** **Lab hours/week: 36** **Credit hours: 3**

COURSE DESCRIPTION:

An introductory course designed to prepare students to meet entry-level requirements for certificate and associate degree programs. Course objectives emphasize skill development and/or refinement in literal, interpretive, and evaluative comprehension; vocabulary; reading rate; and application of study skills to reading assignments. Independent lab study reinforces the lecture component.

**PREREQUISITES:** **Entry is by placement and/or diagnostic testing instruments, completion of the Adult Literacy Program, or by referral of the counseling staff**

REQUIRED COURSE MATERIALS:

**Recommended Textbook:** *Ten Steps to Building College Reading Skills,* Langan, John and Broderick, Bill, New Jersey: Townsend Press, Latest Edition

**Supplies:**
Standard lined notebook paper
# 2 pencils
One package of scantrons

COURSE OBJECTIVES:

*Vocabulary:*
The student will demonstrate the ability to:

1. use context clues to determine the meaning of a word with multiple meanings;
2. use context clues within a paragraph or longer unit of writing to determine the meaning of an unfamiliar word; and,
3. use context within a paragraph or longer unit of writing to determine the meaning of a figurative expression.

*Comprehension:*
The student will demonstrate the ability to:

1. identify the topic of a paragraph or longer unit of writing;
2. identify the stated main idea of a paragraph or longer unit of writing;
3. identify a summary of the stated main idea within a paragraph or longer unit of writing; and,
4. recognize ideas that support, exemplify, or expound the main idea in a paragraph or longer unit of writing.

*Author's Intent:*
The student will demonstrate the ability to:

1. recognize the author's purpose for writing;
2. evaluate the relevance of written material for a specific purpose or audience;
3. evaluate the context, word choice, and phrasing in a reading selection to determine the opinions and attitudes of an author;
4. identify a summary of the intended meaning of a section of material in a reading selection; and,
5. recognize the intended emotional effect that an author's choice or use of words has on the reader.

*Organization of Ideas:*
The student will demonstrate the ability to:

1. determine the purpose of a definition and example organizational pattern in a reading selection;
2. identify transitional words/phrases in defining or explaining a specialized term, phrase, or idea in a reading selection;
3. determine the purpose of a time order organizational pattern in a reading selection;
4. identify transitional words/phrases in determining time order in a reading selection;
5. identify the sequence of steps in technical, scientific, and research-related material;
6. determine the purpose of a spatial order organizational pattern in a reading selection;
7. identify transition words/phrases in determining spatial order in a reading selection;
8. determine the purpose of an order of importance organizational pattern in a reading selection;
9. identify transition words/phrases in determining order of importance in a reading selection;
10. determine the purpose of a comparison organizational pattern in a reading selection;
11. identify transition words/phrases in determining the similarities in two or more ideas, events, or things in a reading selection;

12. determine the purpose of a contrast organizational pattern in a reading selection;
13. identify transition words/phrases in analyzing relationships between ideas in opposition in a reading selection;
14. determine the purpose of a simple listing organizational pattern in a reading selection;
15. identify transition words/phrases in determining a simple listing pattern in a reading selection;
16. determine the purpose of cause-effect organizational pattern in a reading selection;
17. identify transition words/phrases in determining a cause-effect relationship in a reading selection;
18. determine the purpose of a classification organizational pattern in a reading selection;
19. identify transition words/phrases in grouping or categorizing people or things according to an established criteria in a reading selection;
20. determine the purpose of a problem-solution organizational pattern in a reading selection;
21. identify transition words/phrases in recognizing a problem and solution pattern in a reading selection;
22. determine the purpose of summarization organizational pattern in a reading selection; and,
23. identify transition words/phrases in condensing information to its principle parts in a reading selection.

*Critical Reasoning:*

The student will demonstrate the ability to:

1. recognize stated or implied assumptions in evaluating the validity of an author's argument in a reading selection;
2. evaluate the relevance of details, illustrations, and graphic data to an author's argument in a reading selection;
3. judge the strength of a writer's argument in a reading selection;
4. recognize and evaluate the validity of analogies in a reading selection;
5. differentiate between fact and opinion in a reading selection;
6. determine the objectivity and credibility of a writer or source in a reading selection; and,
7. draw a logical conclusion based on stated or implied information within a reading selection.

*Study Skills:*

The student will demonstrate the ability to:

1. organize lecture notes, textbook information, and supplementary material for study purposes;
2. apply specific test-taking strategies in a testing environment;

3. follow written instructions in technical, scientific, and general academic material;
4. interpret information that is presented in charts, graphs, or tables; and,
5. apply rules, methods, concepts, principles, laws, or theories from a reading selection to a new situation.

*Reading Rate:*
The student will demonstrate the ability to increase reading speed while comprehending what is read.

## LECTURE OUTLINE (CONTENT)

| Lecture Topics | Contact Hrs. |
|---|---|
| Course Introduction | 2 |
| Study Skills | 2 |
| Vocabulary | 2 |
| Topic, Main Idea, Supporting Details, Summarizing, and Outlining | 2 |
| Patterns of Organization | 2 |
| Skills Review | 2 |
| Drawing Conclusions, Predicting Outcomes, and Making Inferences | 2 |
| Author's Intent, Argumentation, and Propaganda | 2 |
| Figurative Language and Graphic Aids | 2 |
| Skills Review | 2 |
| Course Wrap-Up | 4 |
| **Total Lecture Hours** | **24** |

## LABORATORY OUTLINE (CONTENT)

The laboratory component supplements lecture by providing additional skills development related to the course objectives. Eight (8) weekly lab application activities are assigned for homework.

**Total Lab Hours** **36**

## COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance.*

*All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

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The following activities will be performed by each student for successful completion of this course:

## I. COMPETENCIES

- *A. Resources: Identifies, organizes, plans, and allocates resources*
  1. follows a schedule to complete assigned tasks on time
  2. prepares individual time-plan
  3. provides a self-evaluation of performance based on the time and quality of work
  4. identifies individual strengths and weaknesses through self-reflection
- *B. Interpersonal: Works with others*
  1. participates in group discussions and projects. Works cooperatively with others and contributes to the group process with ideas and suggestions
  2. provides feedback to peers and instructors
  3. works with diversity through interaction of class members of varied ethnic, gender, religious, and social backgrounds
- *C. Information: Acquires and uses information*
  1. completes assignments in textbook and evaluates individual performance
  2. judges the validity of reading assignments
  3. maintains a folder with class notes and related handouts
  4. draws conclusions and makes inferences from reading assignments and verbally communicates to classmates
  5. selects appropriate software and uses computers to complete tutorial assignments

## II. FOUNDATION SKILLS

- *A. Basic Skills: Reads, writes, performs arithmetic and mathematical operations, listens, and speaks.*
  - *1. Reading: Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*
    - a. reads and studies textbook and reading assignments
    - b. interprets reading assignments
    - c. locates and interprets written information including graphs, charts and periodical articles
    - d. interprets class schedule

2. ***Writing:*** *Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*
   a. completes written assignments
   b. takes class notes
   c. applies reading skills in a writing situation
3. ***Listening:*** *Receives, attends to, interprets, and responds to verbal messages and other cues*
   a. receives/interprets lecture material
   b. responds to verbal messages
   c. confirms verbal message interpretations with instructor and peers, both in and out of class
   d. makes appropriate behavior responses to verbal messages
   e. participates in discussion and identification of the difference between listening and hearing
4. ***Speaking:*** *Organizes ideas and communicates orally*
   a. participates in classroom discussions
   b. organizes ideas and communicates specific questions to the instructor
   c. verbally affirms understanding of a concept, procedure, or required skill

B. ***Thinking Skills:*** *Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons.*
1. ***Creative Thinking:*** *Generates new ideas*
   a. develops new ideas for approaching problem solving
   b. participates in the "brain-storming" process
   c. participates in group problem solving process
   d. practices the team approach to problem solving
2. ***Decision Making:*** *Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*
   a. identifies personal goals
   b. identifies actions required to accomplish personal goals
3. ***Problem Solving:*** *Recognizes problems and devises and implements plan of action*
   a. makes daily accommodations to stay on schedule
   b. seeks additional instruction/clarification for assignment completion
   c. balances social and academic life/responsibilities
   d. accepts responsibility
4. ***Seeing Things In the Mind's Eye:*** *Organizes and processes symbols, pictures, graphs, objects, and other information*
   a. interprets graphical data
   b. interprets non-verbal communication in the classroom

5. ***Knowing How to Learn:*** *Uses efficient learning techniques to acquire and apply new knowledge and skills*
   a. completes and interprets learning style inventory
   b. utilizes techniques for creative thinking
   c. develops strategies for effective problem solving approaches
6. ***Reasoning:*** *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. performs self-analysis of effective learning style
   b. selects appropriate communication form (oral vs. written)

C. ***Personal Qualities:*** *Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty.*
1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
   a. develops stress management techniques that facilitate and encourage achievement of academic and personal goals
   b. accepts responsibility for effective written and oral communication
2. ***Self-Esteem:*** *Believes in own self-worth and maintains a positive view of self*
   a. develops interpersonal skills permitting a positive projection of self
   b. participates in classroom discussions about self-esteem
3. ***Sociability:*** *Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. develops effective communication across cultures
   b. interacts with peers, listens effectively, and provides constructive criticism
   c. learns to distinguish between sympathy and empathy
4. ***Self-Management:*** *Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
   a. monitors/assesses personal goal progress
5. ***Integrity/Honesty:*** *Chooses ethical courses of action*
   a. meets specific criteria standards to successfully complete the course
   b. encouraged to accept ethical and honest courses of action set by example
   c. provide situations and group activities for students to explore and formulate professional and personal ethical standards

REA 020
01/041398

# REA 030

# MASTER PROGRAM

## College Preparatory Reading II

Course Syllabus

**Lecture hours/week: 24** **Lab hours/week: 36** **Credit hours: 3**

COURSE DESCRIPTION:

An intermediate course designed to prepare students to meet entry-level requirements for certificate and associate degree programs. Course objectives emphasize skill development and/or refinement in literal, interpretive, and evaluative comprehension; vocabulary; reading rate; and application of study skills to reading assignments. Independent lab study reinforces the lecture component.

**PREREQUISITES:** **Entry is by placement and/or diagnostic testing instruments, completion of College Preparatory Reading I, or by referral of the counseling staff**

REQUIRED COURSE MATERIALS:

**Recommended Textbook:** *Ten Steps to Advancing College Reading Skills,* Langan, John and Broderick, Bill, New Jersey: Townsend Press, Latest Edition

**Supplies:**
Standard lined notebook paper
#2 pencils
One package of scantrons

COURSE OBJECTIVES:

*Vocabulary:*
The student will demonstrate the ability to:

1. use context clues to determine the meaning of a word with multiple meanings;
2. use context clues within a paragraph or longer unit of writing to determine the meaning of an unfamiliar word; and,
3. use the context within a paragraph or longer unit of writing to determine the meaning of a figurative expression.

*Comprehension:*
The student will demonstrate the ability to:
1. identify the topic of a paragraph or longer unit of writing;
2. identify the stated main idea of a paragraph or longer unit of writing;
3. identify a summary of the unstated main idea within a paragraph or longer unit of writing; and,
4. recognize ideas that support, exemplify, or expound the main idea in a paragraph or longer unit of writing.

*Author's Intent:*
The student will demonstrate the ability to:
1. recognize an author's purpose for writing;
2. evaluate the relevance of written material for a specific purpose or audience;
3. evaluate the content, word choice, and phrasing in a reading selection to determine the opinions and attitudes of an author;
4. identify a summary of the intended meaning of a section of material in a reading selection; and,
5. recognize the intended emotional effect that an author's choice or use of words has on the reader.

*Organization of Ideas:*
The student will demonstrate the ability to:
1. determine the purpose of a definition and example organizational pattern in a reading selection;
2. identify transition words/phrases in defining or explaining a specialized term, phrase, or idea in a reading selection;
3. determine the purpose of a time order organizational pattern in a reading selection;
4. identify transition words/phrases in determining time order in a reading selection;
5. identify the sequence of steps in technical, scientific, and research-related material;
6. determine the purpose of spatial order organizational pattern in a reading selection;
7. identify transition words/phrases in determining spatial order in a reading selection;
8. determine the purpose of an order of importance organizational pattern in a reading selection;
9. identify transition words/phrases in determining order of importance in a reading selection;
10. determine the purpose of a comparison organizational pattern in a reading selection;
11. identify transition words/phrases in determining the similarities in two or more ideas, events, or things in a reading selection;

12. determine the purpose of a contrast organizational pattern in a reading selection;
13. identify transition words/phrases in analyzing relationships between ideas in opposition in a reading selection;
14. determine the purpose of a simple listing organizational pattern in a reading selection;
15. identify transition words/phrases in determining a simple listing pattern in a reading selection;
16. determine the purpose of a cause-effect organizational pattern in a reading selection;
17. identify transition words/phrases in determining a cause-effect relationship in a reading selection;
18. determine the purpose of a classification organizational pattern in a reading selection;
19. identify transition words/phrases in grouping or categorizing people or things according to an established criteria in a reading selection;
20. determine the purpose of a problem-solution organizational pattern in a reading selection;
21. identify transition words/phrases in recognizing a problem and solution pattern in a reading selection;
22. determine the purpose of a summarization organizational pattern in a reading selection; and,
23. identify transition words/phrases in condensing information to its principle parts in a reading selection.

*Critical Reasoning:*

The student will demonstrate the ability to:

1. recognize stated or implied assumptions in evaluating the validity of an author's argument in a reading selection;
2. evaluate the relevance of details, illustrations, and graphic data to an author's argument in a reading selection;
3. judge the strength of a writer's argument in a reading selection;
4. recognize and evaluate the validity of analogies in a reading selection;
5. differentiate between fact and opinion in a reading selection;
6. determine the objectivity and credibility of a writer or source in a reading selection; and,
7. draw a logical conclusion based on stated or implied information within a reading selection.

*Study Skills:*

The student will demonstrate the ability to:

1. organize lecture notes, textbook information, and supplementary material for study purposes;
2. apply specific test-taking strategies in a testing environment;

3. follow written instructions in technical, scientific, and general academic material;
4. interpret information that is presented in charts, graphs, or tables; and,
5. apply rules, methods, concepts, principles, laws, or theories from a reading selection to a new situation.

***Reading Rate:***
The student will demonstrate the ability to increase reading speed while comprehending what is read.

## LECTURE OUTLINE (CONTENT)

| Lecture Topic | Contact Hrs. |
|---|---|
| Course Introduction | 2 |
| Study Skills | 2 |
| Vocabulary | 2 |
| Topic, Main Idea, Supporting Details, Summarizing, and Outlining | 2 |
| Patterns of Organization | 2 |
| Skills Review | 2 |
| Drawing Conclusions, Predicting Outcomes, and Making Inferences | 2 |
| Author's Intent, Argumentation, and Propaganda | 2 |
| Figurative Language and Graphic Aids | 2 |
| Skills Review | 2 |
| Course Wrap-Up | 4 |
| **Total Lecture Hours** | **24** |

## LAB OUTLINE (CONTENT)

The laboratory component supplements lecture by providing additional skills development related to the course objectives. Eight (8) weekly lab application activities are assigned for homework.

**Total Lab Hours** **36**

## COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

The following activities will be performed by each student for successful completion of this course:

## I. COMPETENCIES

*A.* ***Resources:*** *Identifies, organizes, plans, and allocates resources*

1. follows a schedule to complete assigned tasks on time
2. prepares individual time-plan
3. provides a self-evaluation of performance based on the time and quality of work
4. identifies individual strengths and weaknesses through self-reflection

*B.* ***Interpersonal:*** *Works with others*

1. participates in group discussions and projects; works cooperatively with others and contributes to the group process with ideas and suggestions
2. provides feedback to peers and instructors
3. works with diversity through interaction of class members of varied ethnic, gender, religious, and social backgrounds

*C.* ***Information:*** *Acquires and uses information*

1. completes assignments in textbook and evaluates individual performance
2. judges the validity of reading assignments
3. maintains a folder with class notes and related handouts
4. draws conclusions and makes inferences from reading assignments and verbally communicates to classmates
5. selects appropriate software and uses computers to complete tutorial assignments

## II. FOUNDATION SKILLS

*A.* ***Basic Skills:*** *Reads, writes, performs arithmetic and mathematical operations, listens, and speaks.*

*1.* ***Reading:*** *Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*

a. reads and studies textbook and reading assignments
b. interprets reading assignments
c. locates and interprets written information including graphs, charts and periodical articles
d. interprets class schedule

*2.* ***Writing:*** *Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*

a. completes written assignments
b. takes class notes
c. applies reading skills in a writing situation

3. ***Listening:*** *Receives, attends to, interprets, and responds to verbal messages and other cues*
   a. receives/interprets lecture material
   b. responds to verbal messages
   c. confirms verbal message interpretations with instructor and peers, both in and out of class
   d. makes appropriate behavior responses to verbal messages
   e. participates in discussion and identification of the difference between listening and hearing

4. ***Speaking***: *Organizes ideas and communicates orally*
   a. participates in classroom discussions
   b. organizes ideas and communicates specific questions to the instructor
   c. verbally affirms understanding of a concept, procedure, or required skill

**B.** ***Thinking Skills:*** *Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons.*

1. ***Creative Thinking***: *Generates new ideas*
   a. develops new ideas for approaching problem solving
   b. participates in the "brain-storming" process
   c. participates in group problem solving process
   d. practices the team approach to problem solving

2. ***Decision Making***: *Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*
   a. identifies personal goals
   b. identifies actions required to accomplish personal goals

3. ***Problem Solving***: *Recognizes problems and devises and implements plan of action*
   a. makes daily accommodations to stay on schedule
   b. seeks additional instruction/clarification for assignment completion
   c. balances social and academic life/responsibilities
   d. accepts responsibility

4. ***Seeing Things In the Mind's Eye***: *Organizes and processes symbols, pictures, graphs, objects, and other information*
   a. interprets graphical data
   b. interprets non-verbal communication in the classroom

5. ***Knowing How to Learn:*** *Uses efficient learning techniques to acquire and apply new knowledge and skills*
   a. completes and interprets learning style inventory

b. utilizes techniques for creative thinking
c. develops strategies for effective problem solving approaches

6. ***Reasoning***: *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. performs self-analysis of effective learning style
   b. selects appropriate communication form (oral vs. written)

C. ***Personal Qualities:*** *Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty.*

1. ***Responsibility***: *Exerts a high level of effort and perseveres towards goal attainment*
   a. develops stress management techniques that facilitate and encourage achievement of academic and personal goals
   b. accepts responsibility for effective written and oral communication
2. ***Self-Esteem***: *Believes in own self-worth and maintains a positive view of self*
   a. develops interpersonal skills permitting a positive projection of self
   b. participates in classroom discussions about self-esteem
3. ***Sociability***: *Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. develops effective communication across cultures
   b. interacts with peers and listens effectively and provides constructive criticism
   c. learns to distinguish between sympathy and empathy
4. ***Self-Management***: *Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
   a. monitors/assesses personal goal progress
5. ***Integrity/Honesty***: *Chooses ethical courses of action*
   a. meets specific criteria standards to successfully complete the course
   b. encouraged to accept ethical and honest courses of action set by example
   c. provide situations and group activities for students to explore and formulate professional and personal ethical standards

# ENGL 010

# MASTER PROGRAM

## Writing Skills I

### Course Syllabus

**Lecture hours/week: 12** **Lab hours/week: 36** **Credit hours: 2**

COURSE DESCRIPTION:

An introductory course designed to assist students in essential written communication skills. It includes studies in the sentence and its parts, punctuation, capitalization, the parts of speech, spelling, and language usage.

**PREREQUISITES:** **English placement test**

REQUIRED COURSE MATERIALS:

**Recommended Textbooks:**
*Sentence Combining,* Strong, William; Utah State University: McGraw-Hill Inc., Latest Edition
*Basic English Review,* Schacter, Norman and Clark, Alfred T.; Cincinnati, Ohio: South-Western Publishing Co., Latest Edition

**Supplies:**
Notebook paper
Pens (2)
Liquid paper
Dictionary

COURSE OBJECTIVES:

Upon completion of this course, the student will:
1. Locate subjects and verbs in given sentences;
2. Write sentences using subjects and verbs correctly;
3. Define and use the eight parts of speech in sentences;
4. Use the appropriate punctuation marks correctly in sentences;
5. Capitalize words correctly in given sentences;
6. Write sentences using a variety of clauses and phrases;
7. Use conjunctions to join and combine sentences; and,
8. Revise sentences containing fragments, run-ons, and comma splices.

**Lecture:**

The lecture consists of instructor explanation of the grammar, mechanics, and sentence combining techniques that compose the material that is covered for the week.

**Laboratory:**

Lab is designed to supplement and reinforce the material that has been presented during weekly lectures. During the lab time, students, under the guidance of the instructor, work exercises in the workbook. These exercises are corrected during the lab period. Any student who has had difficulty with any exercises has the opportunity to clarify material. Also, the lab periods give the instructor the opportunity to supervise the student's work individually and to offer immediate assistance. In addition, the instructor can request that the student see him/her privately if the instructor perceives that a particular student is having great difficulty with the material.

**LECTURE OUTLINE**

| Lecture Topics | Contact Hrs. |
|---|---|
| Orientation/Initial Writing Assignment | |
| Nouns | |
| Pronouns | |
| Verbs | |
| TEST | |
| Adjectives and Adverbs | |
| TEST | |
| Prepositions | |
| Interjections | |
| TEST | |
| Conjunctions | |
| TEST | |
| Kinds of Sentences | |
| Phrases and Clauses | |
| Sentence Classification | |
| TEST | |
| Punctuation and Capitalization | |
| TEST | |
| Sentence Combining Techniques | |
| Instructor will assign the clusters | |
| TEST (WEEKLY) | |
| REVIEW | |
| FINAL EXAM | |
| STUDENT CONFERENCE | |
| **Total Lecture Hours** | **12** |

## LAB OUTLINE

| Lab Topics | Contact Hrs. |
|---|---|
| Initial Writing Assignment | |
| Nouns | |
| Pronouns | |
| Verbs | |
| Adjectives and Adverbs | |
| Prepositions | |
| Interjections | |
| Conjunctions | |
| Kinds of Sentences | |
| Phrases and Clauses | |
| Sentence Classification | |
| Punctuation and Capitalization | |
| Sentence Combining Techniques | |
| Instructor will assign the clusters | |
| **Total Lab Hours** | **36** |

## COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

---

The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES

- *A.* ***Resources:*** *Identifies, organizes, plans, and allocates resources*
  1. follows a schedule to complete assigned tasks on time
  2. students select and use appropriate video and computer software tutorials
  3. provides a self-evaluation of performance based on the time and quality of work
  4. maintain a record of grades and assesses academic progress and makes necessary adjustments
- *B.* ***Interpersonal:*** *Works with others*

1. participates as a member of a team through class discussions and group projects; works cooperatively with others and contributes to the group process with ideas and suggestions; students are assigned to a group to share ideas
2. provides feedback to peers and instructors
3. works with diversity through interaction with class members of varied ethnic, religious, gender and social backgrounds

C. *Information: Acquires and uses information*
1. maintains individual student progress records and assesses academic progress
2. organizes and maintains class handouts and homework assignments in a individual student folder
3. students participate in assessment and knowledge of writing skills providing feedback to the instructor and classmates
4. uses appropriate computer tutorial software applications

D. *Systems: Understands complex inter-relationships*
1. understands the system involved in the writing process
2. monitors and corrects performance during the writing process

E. *Technology: Works with a variety of technologies*
1. selects and uses appropriate software applications in the writing lab
2. understands proper procedures for set-up of computer and its software to meet individual writing needs

## II. FOUNDATION SKILLS:

A. ***Basic Skills:*** *Reads, writes, performs arithmetic and mathematical operations, listens, and speaks.*

*1.* ***Reading:*** *Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*
a. reads and studies textbook and workbook
b. interprets reading assignments
c. interprets class schedule
d. identifies and locates the eight different parts of speech

*2.* ***Writing:*** *Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*
a. completes written assignments
b. takes class notes
c. composes sentences using the appropriate parts of speech and mechanics

*3.* ***Arithmetic/Mathematics:*** *Performs basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques.*

a. computes individual class average

4. ***Listening:*** *Receives, attends to, interprets, and responds to verbal messages and other cues*
   a. receives/interprets lecture material
   b. responds to verbal messages
   c. confirms verbal message interpretations with instructor and peers, both in and out of class
   d. makes appropriate behavior responses to verbal messages
   e. participates in discussion and identification of the difference between listening and hearing

5. ***Speaking:*** *Organizes ideas and communicates orally*
   a. participates in classroom discussions
   b. organizes ideas and communicates specific questions to the instructor
   c. verbally affirms understanding of a concept, procedure, or required skill
   d. communicates with peers to ensure the smooth and safe operation of the laboratory

B. ***Thinking Skills:*** *Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons.*

1. ***Creative Thinking***: *Generates new ideas*
   a. develops new ideas for approaching problem solving
   b. participates in group problem solving process
   c. practices the team approach to problem solving

2. ***Decision Making:*** *Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*
   a. identifies personal goals
   b. identifies actions required to accomplish personal goals

3. ***Problem Solving***: *Recognizes problems and devises and implements plan of action*
   a. makes daily accommodations to stay on schedule
   b. seeks additional instruction/clarification for assignment completion
   c. accepts responsibility

4. ***Seeing Things In the Mind's Eye:*** *Organizes and processes symbols, pictures, graphs, objects, and other information*
   a. interprets non-verbal communication in the classroom

5. ***Knowing How to Learn:*** *Uses efficient learning techniques to acquire and apply new knowledge and skills*
   a. develops techniques for adapting learning style for differences in teaching style
   b. utilizes techniques for creative thinking

c. develops strategies for effective problem solving approaches

6. ***Reasoning:*** *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. performs self-analysis of effective learning styles for specific situations
   b. selects appropriate communication form
   c. identifies and utilizes the rule of English writing

C. ***Personal Qualities:*** *Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty.*
   1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
      a. develops stress management techniques that facilitate and encourage achievement of academic and personal goals
      b. accepts responsibility for effective written and oral communication
   2. ***Self-Esteem:*** *Believes in own self-worth and maintains a positive view of self*
      a. develops interpersonal skills permitting a positive projection of self through positive reinforcement on daily basis
   3. ***Sociability:*** *Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
      a. develops effective communication across cultures
      b. interacts with peers and listens effectively and provides constructive criticism
      c. learns to distinguish between sympathy and empathy
   4. ***Self-Management:*** *Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
      a. monitors/assesses personal goal progress
      b. provided with goals of the course and is expected to apply the mechanic of writing and sentence combining techniques
   5. ***Integrity/Honesty:*** *Chooses ethical courses of action*
      a. meets specific criteria standards to successfully complete the course
      b. encouraged to accept ethical and honest courses of action set by example

# ENGL 020

# MASTER PROGRAM

## Writing Skills II

### Course Syllabus

**Lecture hours/week: 24** **Lab hours/week: 24** **Credit hours: 3**

**COURSE DESCRIPTION:**

Review of basic sentence grammar and mechanical skills, with an emphasis on writing, editing, and revising paragraphs. Introduction to the multi paragraph essay.

**PREREQUISITES:** **English placement test**

**Recommended Course Materials:**

**Recommended Textbook:** *A Guide to Writing,* Fawcett, S. And Sandberg, A., Houghton Mifflin, Latest Edition

**Supplies:**
Spiral Notebook with perforated tear sheets
Ballpoint pens with black or blue ink
Liquid paper
Comprehensive, paperback, college dictionary
Scantron sheets, 2 packages

**COURSE OBJECTIVES:**

Upon completion of this course, the student will:

1. use appropriate pre-writing techniques to narrow subjects, generate topic ideas, and produce focused topic sentences and thesis statements;
2. write unified and well-developed paragraphs with specific topic sentences by following appropriate organizational plans;
3. plan and write a short well-organized essay, containing a specific thesis statement, an effective introduction, a well-developed body, and an appropriate conclusion;
4. revise paragraphs and essays for coherence, organization, sentence variety, language usage, consistence, and parallel structure; and,
5. edit paragraphs and essays for grammar, punctuation, and spelling.

**LECTURE OUTLINE:**

| Lecture Topics | Contact Hrs. |
|---|---|
| Orientation to course | 1 |
| Agreement | 2 |
| A. The simple sentence | |
| B. Subject-verb agreement | |
| C. Pronoun-antecedent agreement | |
| The sentence | 2 |
| A. Coordination/subordination | |
| B. Fragments | |
| C. Comma splices and run-ons | |
| Punctuation and mechanics | 2 |
| A. The apostrophe | |
| B. The comma | |
| C. The colon | |
| D. Capitalization | |
| E. Titles | |
| F. Quotations | |
| Consistency and parallelism | 3 |
| A. Tense | |
| B. Person | |
| C. Number | |
| D. Discourse | |
| E. Parallel structure | |
| Sentence variety in paragraph writing | 2 |
| A. Mixing long and short sentences | |
| B. Mixing types of sentences | |
| C. Varying beginnings of sentences | |
| D. Joining ideas | |
| Paragraph development and unity | 3 |
| A. Generating ideas | |
| B. Narrowing the topic | |
| C. Writing the topic | |
| D. Developing ideas for the body | |
| E. Arranging ideas in a plan | |
| Paragraph organization and coherence | 3 |
| A. Coherence through order | |
| 1. Time order | |
| 2. Space order | |
| 3. Order of climax | |
| B. Coherence through transitional devices | |
| 1. Repeating words and pronouns | |
| 2. Using synonyms and substitutions | |
| 3. Using transitional expressions | |

| | |
|---|---|
| Language usage in paragraph writing | 3 |
| A. Using exact language | |
| B. Using concise language | |
| C. Using original language | |
| D. Using figurative language | |
| The Essay | 3 |
| A. Structure | |
| B. The thesis statement | |
| C. Planning the body | |
| D. Ordering and linking body paragraphs | |
| E. Writing the first draft | |
| F. Revising the first draft | |
| G. Editing the first draft | |
| H. Writing the final draft | |
| **Total Lecture Hours** | **24** |

LAB OUTLINE:

| Lab Topics | Contact Hrs. |
|---|---|
| Agreement practice | 2 |
| The sentence practice | 2 |
| Punctuation and mechanics practice | 2 |
| Consistency and parallelism practice | 3 |
| Sentence variety in paragraph writing practice | 2 |
| Paragraph development and unity practice | 3 |
| Paragraph organization and coherence practice | 3 |
| Language usage in paragraph writing practice | 3 |
| The Essay practice | 3 |
| Final Exam | 1 |
| **Total Lab Hours** | **24** |

COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES

A. *Resources: Identifies, organizes, plans, and allocates resources*
   1. follows a schedule to complete assigned tasks on time
   2. provides a self-evaluation of performance based on the time and quality of work
   3. maintains a record of individual academic performance, evaluating academic progress and adjusts accordingly

B. *Interpersonal: Works with others*
   1. participates as a member of a team through class discussions and group projects; works cooperatively with others and contributes to the group process with ideas and suggestions
   2. provides peer evaluation and feedback on writing assignments
   3. works with diversity through interaction with class members of varied ethnic, religious, gender, and social backgrounds

C. *Information: Acquires and uses information*
   1. applies appropriate skills and techniques of writing to develop, evaluate, and revise individual compositions
   2. develops organized plan for writing paragraphs and essays
   3. applies learned writing skills and process to communicate information in an organized manner

D. *Systems: Understands complex inter-relationships*
   1. understands the system involved in the writing process
   2. monitors and corrects performance during the writing process

E. *Technology: Works with a variety of technologies*
   1. selects appropriate software applications in the writing lab
   2. applies appropriate software applications in the writing laboratory

II. FOUNDATION SKILLS

A. *Basic Skills: Reads, writes, performs arithmetic and mathematical operations, listens, and speaks.*
   1. *Reading: Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*
      a. reads and studies textbook, workbook, and reading assignments
      b. interprets reading assignments
      c. locates and interprets written information
      d. interprets class schedule
   2. *Writing: Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*
      a. completes written assignments including paragraphs, sentence combining, and essay

b. takes class notes

3. ***Arithmetic/Mathematics:*** *Performs basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques*
   a. computes individual grade through the maintenance of a student grade record
4. ***Listening:*** *Receives, attends to, interprets, and responds to verbal messages and other cues*
   a. receives/interprets lecture material
   b. responds to verbal messages
   c. confirms verbal message interpretations with instructor and peers, both in and out of class
   d. makes appropriate behavior responses to verbal messages
5. ***Speaking:*** *Organizes ideas and communicates orally*
   a. participates in classroom discussions
   b. organizes ideas and communicates specific questions to the instructor
   c. verbally affirms understanding of a concept, procedure, or required skill

B. ***Thinking Skills:*** *Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons.*

1. ***Creative Thinking:*** *Generates new ideas*
   a. develops new ideas for approaching problem solving
   b.. participates in group problem solving process
2. ***Decision Making:*** *Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*
   a. selects alternative paragraph and essay topics
   b. identifies actions required to accomplish personal goals
3. ***Problem Solving:*** *Recognizes problems and devises and implements plan of action*
   a. makes daily accommodations to stay on schedule
   b. seeks additional instruction/clarification for assignment completion
   c. accepts responsibility
4. ***Seeing Things In the Mind's Eye:*** *Organizes and processes symbols, pictures, graphs, objects, and other information*
   a. students are provided with a graphical analogy for paragraph and essay structure to assist in the visualization and application of writing skill development
   b. interprets non-verbal communication in the classroom
5. ***Knowing How to Learn:*** *Uses efficient learning techniques to acquire and apply new knowledge and skills*

a. develops techniques for adapting learning style for differences in teaching style
b. utilizes techniques for creative thinking
c. applies learned writing skills to generate ideas for paragraph and essay construction

6. ***Reasoning:*** *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. applies the rules and principles of basic grammar and mechanics to construct and edit sentences

C. ***Personal Qualities:*** *Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty.*

1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
   a. develops stress management techniques that facilitate and encourage achievement of academic and personal goals
   b. accepts responsibility for effective written and oral communication
2. ***Self-Esteem:*** *Believes in own self-worth and maintains a positive view of self*
   a. develops interpersonal skills permitting a positive projection of self through daily positive feedback from the instructor
3. ***Sociability:*** *Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. develops effective communication across cultures
   b. Interacts with peers and listens effectively and provides constructive criticism
4. ***Self-Management:*** *Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
   a. Monitors/assesses personal goal progress
5. ***Integrity/Honesty:*** *Chooses ethical courses of action*
   a. meets specific criteria standards to successfully complete the course
   b. encouraged to accept ethical and honest courses of action set by example
   c. provide situations and group activities for students to explore and formulate professional and personal ethical standards

# MATH 050

# MASTER PROGRAM

## Basic Mathematics

### Course Syllabus

**Lecture hours/week: 24** **Lab hours/week: 36** **Credit hours: 3**

COURSE DESCRIPTION:

The purpose of this course is to provide a review of the fundamentals of mathematics by stressing practical applications. It includes the concepts of whole numbers, fractions, decimals, measurement and geometry, operations with signed numbers, and solutions of simple linear equations.

**PREREQUISITES:** **Placement by Computer Placement Test (CPT)**

REQUIRED COURSE MATERIALS:

**Recommended Textbook:** *Basic College Math: An Applied Approach,* Aufman/Barker, Houghton Mifflin Publishing, Co., Latest Edition

**Supplies:**
3-ring notebook
Notebook paper
Pencils
Scantron form 882 w/100 answers

COURSE OBJECTIVES:

This course will include practical applications of each topic in reviewing the concepts of Basic Mathematics. Upon completion of the course the student should be able to:

1. Solve various types of practical problems requiring subtraction, multiplication, and division of whole numbers. Order of operations will be included;
2. Solve practical problems requiring addition, subtraction, multiplication, and division of two or more common fractions or mixed numbers;
3. Add, subtract, multiply, and divide decimal numbers and express the answer of all practical applications to the required decimal place. Conversions between decimal numbers, fractions, and percents will be included;

4. Apply addition, subtraction, multiplication, division, and conversions of units of measurement within the English system and express the answers to all practical applications in simplest form;
5. Convert units of measurement within the metric system and solve practical applications requiring addition, subtraction, multiplication, and division of metric units. Conversions between the metric system and the English system will be included;
6. Determine the perimeter, area, or volume of a standard geometric figure and express the answer to a practical problem in the required units of measurement. The basic concepts of angles, lines, and geometric figures will be covered;
7. Add, subtract, multiply, and divide signed numbers. This includes order of operations and evaluating expressions; and,
8. Solve simple linear equations. Translating sentences into equations and solving will be included.

LECTURE OUTLINE:

| Lecture Topic | Contact Hrs. |
|---|---|
| Course Introduction | 1 |
| Whole Numbers | 2 |
| a. Addition | |
| b. Subtraction | |
| c. Multiplication | |
| d. Division | |
| e. Order of Operation | |
| Fractions and Mixed Numbers | 4 |
| a. Reducing Fractions | |
| b. Changing to Equivalent Fractions | |
| c. Greatest Common Denominator | |
| d. Least Common Denominator | |
| e. Addition | |
| f. Subtraction | |
| g. Multiplication | |
| h. Division | |
| i. Applied Problems | |
| Decimal Numbers | 4 |
| a. Reading and Writing Decimal Numbers | |
| b. Rounding off Decimal Numbers to a Given Place Value | |
| c. Converting Numbers between Decimal, Fraction, Percent | |
| d. Addition | |
| e. Multiplication | |
| f. Division | |

| | |
|---|---|
| g. Applied Problems | |
| Measurement | 2 |
| a. Converting Units of Distance, Weight, and Capacity within the English (U.S. Customary) System | |
| b. Converting Units of Distance, Weight, and Capacity within the Metric System | |
| c. Converting Units of Distance, Weight, and Capacity between the English System and the Metric System | |
| d. Addition, Subtraction, Multiplication, and Division of English and Metric Units | |
| e. Applied Problems | |
| Geometry | 3 |
| a. Angles, Lines, and Geometric Figures | |
| b. Perimeters of Standard and Composite Geometric Figures | |
| c. Areas of Standard and Composite Geometric Figures | |
| d. Volumes of Standard and Geometric Solids | |
| Rational Numbers | 4 |
| a. Introduction to Integers | |
| b. Addition and Subtraction of Integers | |
| c. Multiplication and Division of Integers | |
| d. Operations with Rational Numbers | |
| e. Order of Operations | |
| Introduction to Algebra | 4 |
| a. Variable Expressions | |
| b. Introduction to Equations | |
| c. Solving One-Step Linear Equations | |
| d. Solving Multi-Step Linear Equations | |
| e. Translating Verbal Expression into Mathematical Expressions | |
| f. Translating Sentences into Equations and Solving | |
| **Total Lecture Hours** | **24** |

## LAB OUTLINE

| Lab Topics | Contact Hrs. |
|---|---|
| Three hours per week in the classroom will be considered laboratory activity. The student will utilize this time working on current assignments with the assistance of the instructor. | |
| Whole Numbers Practice | 4 |

| | |
|---|---|
| Fractions and Mixed Numbers Practice | 5 |
| Decimal Numbers Practice | 5 |
| Measurement Practice | 5 |
| Geometry Practice | 5 |
| Rational Numbers Practice | 5 |
| Introduction to Algebra Practice | 5 |
| Final Exam | 2 |
| **Total Lab Hours** | **36** |

## COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

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The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES

- *A. Resources: Identifies, organizes, plans, and allocates resources*
  1. follows a schedule to complete assigned tasks on time
  2. provide a self-evaluation of performance based on the time and quality of work
- *B. Interpersonal: Works with others*
  1. participates in classroom dialogue, contributing to group effort in problem solving
  2. works well with all members of the class
- *C. Information: Acquires and uses information*
  1. apply mathematical solutions to problems assigned
  2. organize and maintain lecture notebook and assignment notebook
  3. communicates/interprets information by participating in classroom dialogue
  4. uses 050 computer tutorials as necessary
- *D. Systems: Understands complex inter-relationships*
  1. applies a systematic approach to solving mathematical problems

2. develops an understanding of mathematical system complexity with applications to algebra, geometry, and trigonometric equation solving

*E.* *Technology: Works with a variety of technologies*

1. selects appropriate calculator to meet the needs of the course
2. selects appropriate methods to solve mathematical problems
3. selects appropriate measurement procedures
4. applies mathematical problem solving skills using a scientific calculator

## II. FOUNDATION SKILLS

*A.* ***Basic Skills:*** Reads, writes, performs arithmetic and mathematical operations, listens and speaks.

*1.* ***Reading:*** *Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*

a. interprets word problems, tables, graphs, and drawings to identify presented problem(s)
b. reads and studies textbook, available tutorials, and video tapes
c. uses available tutorials in the laboratory as needed

*2.* ***Writing:*** *Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*

a. communicates problem solving skills by solving mathematical problems in writing using presented information
b. maintains a lecture notebook
c. completes all written assignments

*3.* ***Arithmetic/Mathematics:*** *Perform basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques*

a. performs applied computations of arithmetic, algebra, geometry, and trigonometry
b. performs applied computations of measurement conversions

*4.* ***Listening:*** *Receives, attends to, interprets, and responds to verbal messages and other cues*

a. assimilate classroom instruction
b. interpret and assimilate video instruction
c. observe laboratory demonstrations
d. seek and receive individualized instruction in the laboratory
e. participates as an active listener in classroom instruction

5. ***Speaking:*** *Organizes ideas and communicates orally*
   a. participates in classroom discussions
   b. organize ideas and communicates specific questions to the instructor
   c. verbally affirms understanding of a concept, procedure, or required mathematical skill
   d. communicates with peers

**B.** ***Thinking Skills:*** *Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons.*

1. ***Creative Thinking:*** *Generates new ideas*
   a. develops new ideas for approaching problem solving
   b. participates in the "brain-storming" process
   c. participates in group problem solving process
   d. practices the team approach to problem solving
2. ***Decision Making:*** *Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*
   a. identifies personal goals
   b. selects specific math applications
3. ***Problem Solving:*** *Recognizes problems and devises and implements plan of action*
   a. makes daily accommodations to stay on schedule
   b. seeks additional instruction/clarification for assignment completion
   c. balances social and academic life/responsibilities
   d. accepts responsibility
4. ***Seeing Things In the Mind's Eye:*** *Organizes, and processes symbols, pictures, graphs, objects, and other information*
   a. prepares sketches, graphs, and tables to assist in understanding word problems
   b. interprets word problems
   c. assimilates arithmetic problems in class
   d. interprets non-verbal communication in the classroom
5. ***Knowing How to Learn:*** *Use efficient learning techniques to acquire and apply new knowledge and skills*
   a. recognizes relevant information to solve specific problem(s)
   b. identifies "given" data and applies appropriate equations
   c. demonstrates mastery of basic math skills
   d. uses sequential math skills to support mastery of new skills
   e. thinks through the problem mentally before selecting appropriate formula(e)/equation(s)

6. ***Reasoning:*** *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. understands that the ability to apply mathematics requires "practice"
   b. understands the necessity to perform math as applied to specific technology
   c. selects appropriate mathematical application after considering all given data

C. ***Personal Qualities:*** *Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty.*
1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
   a. develops an understanding that in order to be successful in mathematics, preparation for the day's work is necessary
   b. develops an understanding that classroom attendance is essential for success in the course
   c. accepts the responsibility for active participation in class
2. ***Self-Esteem:*** *Believes in own self-worth and maintains a positive view of self*
   a. learns to take pride in his or her work through positive reinforcement
   b. sees himself or herself as an asset to the class through continued contributions to the group and a shared common goal
   c. understands that an individual with a positive attitude and the belief in their own abilities will systematically seek solutions and be a valuable employee
   d. accepts shared common goals of the class and views each individual as an asset to the group
3. ***Sociability:*** *Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. assist classmates in improving mathematical skills
   b. assist students with special needs as a peer mentor
   c. share laboratory resources
   d. assist classmates in understanding math applications in a group
4. ***Self-Management:*** *Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
   a. maintain a record of academic achievement (individual grade book)
   b. accept the responsibility for self-management
   c. set goals and complete assigned tasks

5. *Integrity/Honesty: Chooses ethical courses of action*
   a. accept the responsibility for own actions
   b. exhibit personal honesty at all times
   c. accept the challenge of doing your own work in the laboratory, during examination, and on outside assignments
   d. understand the consequences of unethical behaviors

# MATH 060

# MASTER PROGRAM

## Beginning Algebra I

Course Syllabus

**Lecture hours/week: 24** **Lab hours/week: 36** **Credit hours: 3**

COURSE DESCRIPTION:

The purpose of this course is to give a background in pre-algebra and elementary algebraic concepts. It includes the concepts of signed numbers, evaluating expressions, polynomials, operations with algebraic expressions, and factoring.

**PREREQUISITES:** **Basic Mathematics or**
**Diagnostic Placement Testing**

REQUIRED COURSE MATERIALS:

**Recommended Textbook:** *Elementary Algebra for College Students,* Angel, Allen R., Prentice Hall Publishing Co., Latest Edition

**Supplies:**
Notebook paper
Pencils
Scantron form 882 w/100 answers
1 - 5.25 floppy disk

COURSE OBJECTIVES:

Upon completion of the course the student will:

1. Add, subtract, multiply, and divide signed numbers following the proper order of operations;
2. Apply the laws of exponents;
3. Perform additions, subtractions, multiplications, and divisions with algebraic expressions;
4. Manipulate formulae;
5. Find special products; and,
6. Factor polynomials.

## LECTURE OUTLINE:

| Lecture Topics | Contact Hrs. |
|---|---|
| Students enrolled in Beginning Algebra I are scheduled in class for a period of two (2) lecture hours per week and three (3) lab hours per week. | |
| Operations with Real Numbers | 7 |
| a. Order of Operations with Whole Numbers | |
| b. Absolute Value | |
| c. Addition, Subtraction, Multiplication, and Division of Signed Numbers | |
| d. Meaning of Exponents | |
| e. Order of Operations with Real Numbers | |
| f. Evaluating Expressions and Formulas | |
| Exponents and Algebraic Expression | 8 |
| a. Laws of Exponents | |
| b. Scientific Notation | |
| c. Combining "Like" Terms | |
| d. Addition and Subtraction of Polynomials | |
| e. Multiplication and Division of Polynomials | |
| Factoring | 9 |
| a. Finding the Greatest Common Factor | |
| b. Factoring by Grouping | |
| c. Factoring the Difference of Two Squares | |
| d. Factoring Trinomials of the Form $ax^2 + bx = c$ | |
| e. Composite Factoring | |
| f. Factoring the Sum and Difference of Cubes | |
| **Total Lecture Hours** | **24** |

## LAB OUTLINE:

| Lab Topics | Contact Hrs. |
|---|---|
| Students will practice algebraic skills through the use of *Algebra Mentor* (computer software from Brooks/Cole Publishing Company) or equivalent lab assignments from the text or handouts. Two hours per week in the classroom will be considered laboratory activity. The student will utilize this time working on current assignments with the assistance of the instructor. | |
| Operations with Real Numbers | 9 |
| Exponents and Algebraic Expressions | 10 |
| Factoring | 12 |
| Testing | 5 |
| **Total Lab Hours** | **36** |

## COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

---

The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES

- *A.* ***Resources:*** *Identifies, organizes, plans, and allocates resources*
  1. follows a schedule to complete assigned tasks on time
  2. provide a self-evaluation of performance based on the time and quality of work
- *B.* ***Interpersonal:*** *Works with others*
  1. participates in classroom dialogue, contributing to group effort in problem solving
  2. works well with all members of the class
- *C.* ***Information:*** *Acquires and uses information*
  1. apply mathematical solutions to problems assigned
  2. organize and maintain lecture notebook and assignment notebook
  3. communicates/interprets information by participating in classroom dialogue
  4. uses 050 computer tutorials as necessary
- *D.* *Systems: Understands complex inter-relationships*
  1. applies a systematic approach to solving mathematical problems
  2. develops an understanding of mathematical system complexity with applications to algebra, geometry, and trigonometric equation solving
- *E.* *Technology: Works with a variety of technologies*
  1. selects appropriate calculator to meet the needs of the course
  2. selects appropriate methods to solve mathematical problems
  3. selects appropriate measurement procedures
  4. applies mathematical problem solving skills using a scientific calculator

## II. FOUNDATION SKILLS

A. ***Basic Skills:*** *Reads, writes, performs arithmetic and mathematical operations, listens and speaks.*

1. ***Reading:*** *Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*
   a. interprets word problems, tables, graphs, and drawings to identify presented problem(s)
   b. reads and studies textbook, available tutorials, and video tapes
   c. uses available tutorials in the laboratory as needed
2. ***Writing:*** *Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*
   a. communicates problem solving skills by solving mathematical problems in writing using presented information
   b. maintains a lecture notebook
   c. completes all written assignments
3. ***Arithmetic/Mathematics:*** *Perform basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques*
   a. performs applied computations of arithmetic, algebra, geometry, and trigonometry
   b. performs applied computations of measurement conversions
4. ***Listening:*** *Receives, attends to, interprets, and responds to verbal messages and other cues*
   a. assimilate classroom instruction
   b. interpret and assimilate video instruction
   c. observe laboratory demonstrations
   d. seek and receive individualized instruction in the laboratory
   e. participates as an active listener in classroom instruction
5. ***Speaking:*** *Organizes ideas and communicates orally*
   a. participates in classroom discussions
   b. organizes ideas and communicates specific questions to the instructor
   c. verbally affirms understanding of a concept, procedure, or required mathematical skill
   d. communicates with peers

B. ***Thinking Skills:*** *Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons.*

1. ***Creative Thinking:*** *Generates new ideas*

a. develops new ideas for approaching problem solving
b. participates in the "brain-storming" process
c. participates in group problem solving process
d. practices the team approach to problem solving

2. ***Decision Making:*** *Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*
   a. identifies personal goals
   b. selects specific math applications
3. ***Problem Solving:*** *Recognizes problems and devises and implements plan of action*
   a. makes daily accommodations to stay on schedule
   b. seeks additional instruction/clarification for assignment completion
   c. balances social and academic life/responsibilities
   d. accepts responsibility
4. ***Seeing Things In the Mind's Eye:*** *Organizes, and processes symbols, pictures, graphs, objects, and other information*
   a. prepares sketches, graphs, and tables to assist in understanding word problems
   b. interprets word problems
   c. assimilates arithmetic problems in class
   d. interprets non-verbal communication in the classroom
5. ***Knowing How to Learn:*** *Use efficient learning techniques to acquire and apply new knowledge and skills*
   a. recognizes relevant information to solve specific problem(s)
   b. identifies "given" data and applies appropriate equations
   c. demonstrates mastery of basic math skills
   d. uses sequential math skills to support mastery of new skills
   e. thinks through the problem mentally before selecting appropriate formula(e)/equation(s)
6. ***Reasoning:*** *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. understands that the ability to apply mathematics requires "practice"
   b. understands the necessity to perform math as applied to specific technology
   c. selects appropriate mathematical application after considering all given data

C. ***Personal Qualities:*** *Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty.*

1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
   a. develops an understanding that in order to be successful in mathematics, preparation for the day's work is necessary
   b. develops an understanding that classroom attendance is essential for success in the course
   c. accepts the responsibility for active participation in class
2. ***Self-Esteem:*** *Believes in own self-worth and maintains a positive view of self*
   a. learns to take pride in his or her work through positive reinforcement
   b. sees himself or herself as an asset to the class through continued contributions to the group and a shared common goal
   c. understands that an individual with a positive attitude and the belief in their own abilities will systematically seek solutions and be a valuable employee
   d. accepts shared common goals of the class and views each individual as an asset to the group
3. ***Sociability:*** *Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. assist classmates in improving mathematical skills
   b. assist students with special needs as a peer mentor
   c. share laboratory resources
   d. assist classmates in understanding math applications in a group
4. ***Self-Management:*** *Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
   a. maintain a record of academic achievement (individual grade book)
   b. accept the responsibility for self-management
   c. set goals and complete assigned tasks
5. ***Integrity/Honesty:*** *Chooses ethical courses of action*
   a. accept the responsibility for own actions
   b. exhibit personal honesty at all times
   c. accept the challenge of doing your own work in the laboratory, during examination, and on outside assignments
   d. understand the consequences of unethical behaviors

# MATH 070

# MASTER PROGRAM

## Beginning Algebra II

Course Syllabus

**Lecture hours/week: 24** **Lab hours/week: 36** **Credit hours: 3**

COURSE DESCRIPTION:

This course is designed as a continuation of Beginning Algebra I. It begins with rational expressions followed by linear and quadratic equations, formulas and word problems. A basic geometry section will also be included.

**PREREQUISITES:** **Beginning Algebra I**

REQUIRED COURSE MATERIALS:

**Recommended Textbook:** *Elementary Algebra for College Students,* Angel, Allen R., Prentice Hall Publishing Co., Latest Edition

**Supplies:**
Notebook paper
Pencils
Scantron form 882 w/100 answers
1 - 5.25 floppy disk

COURSE OBJECTIVES:

Upon completion of the course the student will:

1. Reduce algebraic fractions;
2. Multiply and divide algebraic fractions;
3. Add and subtract algebraic fractions with a common denominator;
4. Find the least common multiple;
5. Add and subtract algebraic fractions with unlike denominators;
6. Simplify complex algebraic fractions;
7. Add and subtract complex algebraic fractions;
8. Factor completely and reduce algebraic fractions;
9. Solve linear equations using the addition and multiplication properties;
10. Solve linear equations with a variable on only one side of the equation;
11. Solve linear equations with variables on both sides of the equation;
12. Solve linear equations involving fractions;

13. Solve formulas for indicated variables;
14. Insert the symbols ≤ , ≥ , or = to make a statement true;
15. Solve ratios and proportions using cross multiplication;
16. Change word problems into equations;
17. Solve number and motion problems;
18. Solve mixture and geometric problems;
19. Find the area of a rectangle;
20. Find the volume of a rectangular solid;
21. Find the area of a:
    a. Square;
    b. Triangle;
    c. Circle;
    d. Trapezoid;
22. Find the volume of a cube and a curve;
23. Find the volume, lateral area and total surface area of a cylinder;
24. Find the volume of a pyramid and a sphere;
25. Find the lateral surface area, total surface area and volume of a prism; and,
26. Find the area of a sphere.

LECTURE OUTLINE:

| Lecture Topic | Contact Hrs. |
|---|---|
| Rational Expressions | 8 |
| a. Reducing Rational Expressions | |
| b. Multiplication and Division of Rational Expressions | |
| c. Addition and Subtraction of Rational Expressions | |
| d. Simplifying Complex Fractions | |
| e. Solving Rational Expressions | |
| Solving Linear Equations | 10 |
| a. Solving Equations Involving One Operation | |
| b. Solving Equations Involving More Than One Operation | |
| c. Solving Equations Involving the Distributive Property | |
| d. Solving Ratio and Proportion Problems | |
| e. Solving Equations Containing Rational Expressions | |
| f. Solving Quadratic Equations by Factoring | |
| g. Solving for a Variable in a Formula | |
| h. Translating Word Problems into Equations and Solving | |
| Geometry | 6 |
| a. Area and Volume | |

1. Rectangle
2. Square
3. Triangle
4. Circle
5. Trapezoid

b. Volume
1. Rectangle
2. Cube
3. Prism
4. Cone
5. Sphere

c. Cylinder
1. Lateral Area
2. Total Surface Area
3. Surface Area
4. Volume

**Total Lecture Hours** **24**

**LAB OUTLINE:**

| **Lab Topics** | **Contact Hrs.** |
|---|---|
| Students will practice algebraic skills through the use of *Algebra Mentor* (computer software from Brooks/Cole Publishing Company) or equivalent lab assignments from the text or handouts. | |
| Rational Expressions | 10 |
| Solving Linear Equations | 13 |
| Geometric Lab Assignments | 8 |
| Testing | 5 |
| **Total Lab Hours** | **36** |

**COURSE OBJECTIVES: SCANS COMPETENCIES**

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES

*A.* ***Resources:*** *Identifies, organizes, plans, and allocates resources*
1. follows a schedule to complete assigned tasks on time
2. provide a self-evaluation of performance based on the time and quality of work

*B.* ***Interpersonal:*** *Works with others*
1. participates in classroom dialogue, contributing to group effort in problem solving
2. works well with all members of the class

*C.* ***Information:*** *Acquires and uses information*
1. apply mathematical solutions to problems assigned
2. organize and maintain lecture notebook and assignment notebook
3. communicates/interprets information by participating in classroom dialogue
4. uses 050 computer tutorials as necessary

*D.* ***Systems:*** *Understands complex inter-relationships*
1. applies a systematic approach to solving mathematical problems
2. develops an understanding of mathematical system complexity with applications to algebra, geometry, and trigonometric equation solving

*E.* ***Technology:*** *Works with a variety of technologies*
1. selects appropriate calculator to meet the needs of the course
2. selects appropriate methods to solve mathematical problems
3. selects appropriate measurement procedures
4. applies mathematical problem solving skills using a scientific calculator

II. FOUNDATION SKILLS

*A.* ***Basic Skills:*** *Reads, writes, performs arithmetic and mathematical operations, listens and speaks.*

*1.* ***Reading:*** *Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*
   a. interprets word problems, tables, graphs, and drawings to identify presented problem (s)
   b. reads and studies textbook, available tutorials, and video tapes
   c. uses available tutorials in the laboratory as needed

2. *Writing: Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*
   a. communicates problem solving skills by solving mathematical problems in writing using presented information
   b. maintains a lecture notebook
   c. completes all written assignments
3. *Arithmetic/Mathematics: Perform basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques*
   a. performs applied computations of arithmetic, algebra, geometry, and trigonometry
   b. performs applied computations of measurement conversions
4. *Listening: Receives, attends to, interprets, and responds to verbal messages and other cues*
   a. assimilate classroom instruction
   b. interpret and assimilate video instruction
   c. observe laboratory demonstrations
   d. seek and receive individualized instruction in the laboratory
   e. participates as an active listener in classroom instruction
5. *Speaking: Organizes ideas and communicates orally*
   a. participates in classroom discussions
   b. organizes ideas and communicates specific questions to the instructor
   c. verbally affirms understanding of a concept, procedure, or required mathematical skill
   d. communicates with peers

B. *Thinking Skills: Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons.*
1. *Creative Thinking: Generates new ideas*
   a. develops new ideas for approaching problem solving
   b. participates in the "brain-storming" process
   c. participates in group problem solving process
   d. practices the team approach to problem solving
2. *Decision Making: Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*
   a. identifies personal goals
   b. selects specific math applications
3. *Problem Solving: Recognizes problems and devises and implements plan of action*

a. makes daily accommodations to stay on schedule
b. seeks additional instruction/clarification for assignment completion
c. balances social and academic life/responsibilities
d. accepts responsibility

4. ***Seeing Things In the Mind's Eye:*** *Organizes, and processes symbols, pictures, graphs, objects, and other information*
   a. prepares sketches, graphs, and tables to assist in understanding word problems
   b. interprets word problems
   c. assimilates arithmetic problems in class
   d. interprets non-verbal communication in the classroom
5. ***Knowing How to Learn:*** *Use efficient learning techniques to acquire and apply new knowledge and skills*
   a. recognizes relevant information to solve specific problem(s)
   b. identifies "given" data and applies appropriate equations
   c. demonstrates mastery of basic math skills
   d. uses sequential math skills to support mastery of new skills
   e. thinks through the problem mentally before selecting appropriate formula(e)/equation(s)
6. ***Reasoning:*** *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. understands that the ability to apply mathematics requires "practice"
   b. understands the necessity to perform math as applied to specific technology
   c. selects appropriate mathematical application after considering all given data

C. ***Personal Qualities:*** *Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty.*

1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
   a. develops an understanding that in order to be successful in mathematics, preparation for the day's work is necessary
   b. develops an understanding that classroom attendance is essential for success in the course
   c. accepts the responsibility for active participation in class
2. ***Self-Esteem:*** *Believes in own self-worth and maintains a positive view of self*

a. learns to take pride in his or her work through positive reinforcement
b. sees himself or herself as an asset to the class through continued contributions to the group and a shared common goal
c. understands that an individual with a positive attitude and the belief in their own abilities will systematically seek solutions and be a valuable employee
d. accepts shared common goals of the class and views each individual as an asset to the group

3. *Sociability: Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. assist classmates in improving mathematical skills
   b. assist students with special needs as a peer mentor
   c. share laboratory resources
   d. assist classmates in understanding math applications in a group
4. *Self-Management: Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
   a. maintain a record of academic achievement (individual grade book)
   b. accept the responsibility for self-management
   c. set goals and complete assigned tasks
5. *Integrity/Honesty: Chooses ethical courses of action*
   a. accept the responsibility for own actions
   b. exhibit personal honesty at all times
   c. accept the challenge of doing your own work in the laboratory, during examination, and on outside assignments
   d. understand the consequences of unethical behaviors

# GENERAL EDUCATION COURSES

| Course | Title | Credit Hours |
|---|---|---|
| ENGLISH 107 | Oral/Written Communications | 3 |
| ENGLISH 108 | Introduction to Technical Communications | 3 |
| ENGLISH 134 | Interpersonal Communications | 3 |
| ENGLISH 1301 | Composition I | 3 |
| MATH 1314 | College Algebra | 3 |
| MATH 1316 | Plane Trigonometry | 3 |
| MATH 115 | Occupational Mathematics | 4 |
| PHYSICS 1310 | Fundamentals of Physics | 3 |
| PSYCHOLOGY 112 | Human Relations | 3 |
| PSYCHOLOGY 1100 | College Success Skills | 1 |
| PSYCHOLOGY 2301 | General Psychology | 3 |

ENGL 107

# MASTER PROGRAM

## Oral and Written Communications

### Course Syllabus

**Total lecture hours: 36** **Total lab hours: 0** **Credit hours: 3**

COURSE DESCRIPTION:

Introduces the techniques of oral and written communications most needed by the entry level technician. Emphasis is on oral communications situations between peers, between technician and supervisor or subordinate, and between technician and groups.

PREREQUISITES: NONE

COURSE OBJECTIVES:

Upon completion of the course, the student will be able to do the following:

1. Understand and identify the principles of oral and written communication;
2. Apply principles of English grammar to proofread and edit written material;
3. Prepare a resume and letter of application;
4. After viewing a sample job interview, answer a set of questions with at least 70% accuracy;
5. Recognize various business reports and memo formats;
6. Prepare selected oral and written reports and memos;
7. Recognize various business letter formats; and,
8. Prepare selected business letters.

REQUIRED COURSE MATERIALS:

**Recommended Textbook:** *Technical Writing, Process and Product*, Gerson, S.J. and Gerson, S.M., Prentice Hall, Inc., Latest Edition

**Supplies:**
8½ x 11 inch notebook paper - 200 sheets
Erasable Ballpoint Pen (blue or black) - 2
Typing Paper - 25 sheets
#2 Pencils - 2
Paperback Dictionary (your choice)
Scantrons (2 packages)
Notebook

## COURSE OUTLINE:

| Topics | Contact Hrs. |
|---|---|
| Orientation and Introductory Assignments | 3 |
| Introductory Speeches | 3 |
| Reading and Listening Skills | 3 |
| Communicating by Writing | 3 |
| Communicating by Writing (continued) | 3 |
| Oral Communication | 3 |
| Nonverbal Communication | 3 |
| Communication Problems | 3 |
| Communicating Up, Down, Across | 3 |
| Getting a Job/Filling Out Forms | 3 |
| The Interview Process | 3 |
| Final Exam/Course Wrap-up | 3 |
| **Total Lecture Hours** | **36** |

## COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

---

The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES

- A. *Resources: Identifies, organizes, plans, and allocates resources*
  1. Follows a schedule to complete assigned tasks on time
  2. Provides a self-evaluation of performance based on the time and quality of work
  3. Prepares and formulates short reports, memos, and letters
- B. *Interpersonal: Works with others*
  1. Participates as a member of a team through class discussions and group projects;
  2. Works cooperatively with others and contributes to the group process with ideas and suggestions
  3. Provides feedback to peers and instructors

4. Works with diversity through interaction with class members of varied ethnic, religious, and social backgrounds

C. *Information: Acquires and uses information*
   1. Acquires and evaluates information through preparing graphs and charts and interpreting these graphs and charts
   2. Organizes and maintains information by formulating letters, memos, and short reports;
   3. Uses critical thinking skills in making decisions, presenting informative, and demonstration speeches
   4. Interprets articles from periodicals, newsletters, etc., relevant to individual student's major and prepares short interpretive reports
   5. Uses computers to prepare various required writing assignments

D. *Systems: Understands complex inter-relationships*
   1. Understands systems; performs various tasks in the writing laboratory using appropriate computer software
   2. Demonstrates knowledge and organizational structure and uses the chain of command
   3. Monitors and corrects performance during the writing process in the writing lab

E. *Technology: Works with a variety of technologies*
   1. Selects technology; applies computer and writing skills in the writing laboratory by using appropriate software
   2. Monitors and corrects performance;
   3. Understands proper procedures for set up of computer and its software to meet individual writing needs

## II. FOUNDATION SKILLS

A. **Basic Skills:** Reads, writes, performs arithmetic and mathematical operations, listens, and speaks
   1. ***Reading:*** *Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*
      a. Reads and studies textbook and reading assignments
      b. Interprets reading assignments
      c. Locates and interprets written information including graphs, charts and periodical articles
      d. Interprets class schedule
   2. ***Writing:*** *Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*
      a. Completes written assignments, including memos, letters, graphs, and charts

b. Takes class notes

3. ***Listening:*** *Receives, attends to, interprets, and responds to verbal messages and other cues*
   a. Receives/interprets lecture material
   b. Responds to oral messages
   c. Confirms oral message interpretations with instructor and peers, both in and out of class
   d. Makes appropriate behavior responses to oral messages
   e. Participates in discussion and identification of the difference between listening and hearing
4. ***Speaking:*** *Organizes ideas and communicates orally*
   a. Participates in classroom discussions
   b. Organizes ideas and communicates specific questions to the instructor
   c. Orally affirms understanding of a concept, procedure, or required skill
   d. Communicates with peers to ensure the smooth and safe operation of the laboratory

B. **Thinking Skills:** Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons

1. ***Creative Thinking***: *Generates new ideas*
   a. Develops new ideas for approaching problem solving
   b. Participates in the brain-storming process
   c. Participates in group problem solving process
   d. Practices the team approach to problem solving
2. ***Decision Making:*** *Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*
   a. Identifies personal goals
   b. Identifies actions required to accomplish personal goals
3. ***Problem Solving:*** *Recognizes problems and devises and implements plan of action*
   a. Makes daily accommodations to stay on schedule
   b. Seeks additional instruction/clarification for assignment completion
   c. Balances social and academic life/responsibilities
   d. Accepts responsibility
4. ***Seeing Things In the Mind's Eye:*** *Organizes and processes symbols, pictures, graphs, objects, and other information*
   a. Interprets basic graphs and inspection reports; identifies inspection report symbols
   b. Interprets non-verbal communication in the classroom
5. ***Knowing How to Learn:*** *Uses efficient learning techniques to acquire and apply new knowledge and skills*

a. Develops techniques for adapting learning style for differences in teaching style
b. Utilizes techniques for creative thinking
c. Develops strategies for effective problem solving approaches

6. ***Reasoning:*** *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. Performs self-analysis of effective learning styles for specific situations
   b. Selects appropriate communication form (oral vs. written) to effectively apply communication skills on-the-job
   c. Communicates effectively within the workplace hierarchy

C. **Personal Qualities:** Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty

1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
   a. Develops stress management techniques that facilitate and encourage achievement of academic and personal goals
   b. Accepts responsibility for effective written and oral communication on-the-job
2. ***Self-Esteem:*** *Believes in own self-worth and maintains a positive view of self*
   a. Develops interpersonal skills permitting a positive projection of self
3. ***Sociability:*** *Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. Develops effective communication across cultures
   b. Interacts with peers and listens effectively and provides constructive criticism
   c. Learns to distinguish between sympathy and empathy
4. ***Self-Management:*** *Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
   a. Monitors/assesses personal goal progress
   b. Performs goal setting activities such as resume preparation, completion of job application forms, and refinement of interviewing skills
5. ***Integrity/Honesty:*** *Chooses ethical courses of action*
   a. Meets specific criteria standards to successfully complete the course
   b. Accepts ethical and honest courses of action set by example

c. Explores and formulates professional and personal ethical standards

ENGL 108

# MASTER PROGRAM

## Introduction to Technical Communications

### Course Syllabus

**Lecture hours/week: 24** **Lab hours/week: 24** **Credit hours: 3**

COURSE DESCRIPTION:

Introduction to the nature of the communicative skills and thinking processes, with practical exercises in writing, reading, speaking, spelling, and vocabulary as related to technical areas.

PREREQUISITES: NONE

REQUIRED COURSE MATERIALS:

**Recommended Textbooks:**
*Writing That Works,* Oliu, Walter E., et. al., New York: St. Martin's Press, Latest Edition
*Webster's New World Dictionary* (or any comprehensive dictionary)

**Supplies:**
8-1/2 " 3-ring college rules white notebook paper
Erasable ball-point pen (one)
Ball-point pens (2)
Liquid paper
Scantron sheets, # 882, one package

COURSE OBJECTIVES:

Upon successful completion of Introduction to Technical Communications, the student will:

1. Write coherent paragraphs which contain topic sentences and display proper composition techniques;
2. Organize and write short reports;
3. Compose business letters using proper style and form;
4. Prepare a resume and letter of application to present to a prospective employer;
5. Use outlining techniques to organize written and oral assignments;
6. Deliver a well-prepared, concise, interesting oral report;
7. Utilize the library; and,
8. Speak and write with improved grammar.

## LECTURE OUTLINE:

| Lecture Topics | Contact Hrs. |
|---|---|
| Orientation | 1 |
| Review of Grammar and Punctuation | 4 |
| Paragraph Writing with Emphasis on Unity, Coherence, Good Sentences, and Correct Grammar and Punctuation | 3 |
| Basic Computer Writing Skills | |
| Structuring and Outline; Writing an Explanation of Process | 2 |
| Achieving Emphasis in Writing: Subordination and Voice | 2 |
| Organizing Information; Seven Methods of Organization | 2 |
| Writing Strategies; Description and Comparison | 2 |
| Business Correspondence: Techniques of Letter Writing | 4 |
| Preparation for Work Force: Job Application, Preparation of Resume, Interview Techniques, Oral Reporting | 4 |
| **Total Lecture Hours** | **24** |

## LAB OUTLINE:

| Lab Topics | Contact Hrs. |
|---|---|
| Working Exercises in Grammar and Punctuation: Correcting Exercises | 2 |
| Writing Paragraphs in Class; Presenting Rough Drafts for Constructive Criticism and Correction by Instructor | 2 |
| Structuring Outlines and Writing a Rough Draft of a Process Explanation | 2 |
| Working Exercises in Subordination, Voice, and Parallel Construction | 2 |
| Preparing a Formal Outline; Writing a Rough Draft of a Brief Technical Paper | 2 |
| Preparing Outlines for Papers to be Written Using Description and Comparison | 2 |
| Writing Rough Drafts of Business letters for Constructive Criticism by Instructor | 2 |
| Writing Letters of Applications, Resumes, filling out job applications | 3 |
| Testing | 10 |
| **Total Lab Hours** | **24** |

## COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part*

*foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

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The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES

- *A. Resources: Identifies, organizes, plans, and allocates resources*
  1. follows a schedule to complete assigned tasks on time
  2. provides a self-evaluation of performance based on the time and quality of work
  3. prepares and formulates short reports, memos, and letters
- *B. Interpersonal: Works with others*
  1. participates as a member of a team through class discussions and group projects; works cooperatively with others and contributes to the group process with ideas and suggestions
  2. provides feedback to peers and instructors
  3. works with diversity through interaction with class members of varied ethnic, religious, and social backgrounds
- *C. Information: Acquires and uses information*
  1. acquires and evaluates information through preparing graphs and charts and interpreting these graphs and charts
  2. organizes and maintains information by formulating letters, memos, and short reports; also uses critical thinking skills in making decisions, presenting informative, and demonstration speeches
  3. interprets articles from periodicals, newsletters, etc., relevant to individual student's major and prepares short interpretive reports
  4. uses computers to prepare various required writing assignments
- *D. Systems: Understands complex inter-relationships*
  1. understands systems; performs various tasks in the writing lab using appropriate computer software
  2. demonstrates knowledge and organizational structure and uses the chain of command
  3. monitors and corrects performance during the writing process in the writing lab
- *E. Technology: Works with a variety of technologies*
  1. selects technology; applies computer and writing skills in the writing lab by using appropriate software

2. monitors and corrects performance; understands proper procedures for set up of computer and its software to meet individual writing needs

## II. FOUNDATION SKILLS

*A. **Basic Skills:** Reads, writes, performs arithmetic and mathematical operations, listens, and speaks.*

*1. **Reading:** Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*

a. reads and studies textbook and reading assignments
b. interprets reading assignments
c. locates and interprets written information including graphs, charts and periodical articles
d. interprets class schedule

*2. **Writing:** Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*

a. completes written assignments, including memos, letters, graphs, and charts
b. takes class notes

*3. **Listening:** Receives, attends to, interprets, and responds to verbal messages and other cues*

a. receives/interprets lecture material
b. responds to verbal messages
c. confirms verbal message interpretations with instructor and peers, both in and out of class
d. makes appropriate behavior responses to verbal messages
e. participates in discussion and identification of the difference between listening and hearing

*4. **Speaking:** Organizes ideas and communicates orally*

a. participates in classroom discussions
b. organizes ideas and communicates specific questions to the instructor
c. verbally affirms understanding of a concept, procedure, or required skill
d. communicates with peers to ensure the smooth and safe operation of the laboratory

*B. **Thinking Skills:** Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons.*

*1. **Creative Thinking:** Generates new ideas*

a. develops new ideas for approaching problem solving
b. participates in the "brain-storming" process
c. participates in group problem solving process

d. practices the team approach to problem solving

2. ***Decision Making:*** *Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*
   a. identifies personal goals
   b. identifies actions required to accomplish personal goals
3. ***Problem Solving:*** *Recognizes problems and devises and implements plan of action*
   a. makes daily accommodations to stay on schedule
   b. seeks additional instruction/clarification for assignment completion
   c. balances social and academic life/responsibilities
   d. accepts responsibility
4. ***Seeing Things In the Mind's Eye:*** *Organizes and processes symbols, pictures, graphs, objects, and other information*
   a. interprets basic graphs and inspection reports; identifies inspection report symbols
   b. interprets non-verbal communication in the classroom
5. ***Knowing How to Learn:*** *Uses efficient learning techniques to acquire and apply new knowledge and skills*
   a. develops techniques for adapting learning style for differences in teaching style
   b. utilizes techniques for creative thinking
   c. develops strategies for effective problem solving approaches
6. ***Reasoning:*** *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. performs self-analysis of effective learning styles for specific situations
   b. selects appropriate communication form (oral vs. written) to effectively apply communication skills "on-the-job"
   c. communicates effectively within the workplace hierarchy

C. ***Personal Qualities:*** *Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty.*

1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
   a. develops stress management techniques that facilitate and encourage achievement of academic and personal goals
   b. accepts responsibility for effective written and oral communication "on-the-job"
2. ***Self-Esteem:*** *Believes in own self-worth and maintains a positive view of self*

a. develops interpersonal skills permitting a positive projection of self

3. ***Sociability:*** *Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. develops effective communication across cultures
   b. interacts with peers and listens effectively and provides constructive criticism
   c. learns to distinguish between sympathy and empathy
4. ***Self-Management:*** *Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
   a. monitors/assesses personal goal progress
   b. performs goal setting activities such as resume preparation, completion of job application forms, and refinement of interviewing skills
5. ***Integrity/Honesty:*** *Chooses ethical courses of action*
   a. meets specific criteria standards to successfully complete the course
   b. encouraged to accept ethical and honest courses of action set by example
   c. provide situations and group activities for students to explore and formulate professional and personal ethical standards

ENGL 108
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ENGL 134

# MASTER PROGRAM

## Interpersonal Communications

### Course Syllabus

**Total lecture hours: 48** **Total lab hours: 0** **Credit hours: 3**

**COURSE DESCRIPTION:**

Introduces theories and exercises in verbal and nonverbal communication with focus on interpersonal relationships, the study of internal and external factors that impact communication, communication clarification, and conflict resolution. Various presentations are required.

**PREREQUISITE:** **Composition I**

**COURSE OBJECTIVES:**

After successful completion of this course, the students will be able to:

1. Employ models to demonstrate communication effectiveness;
2. Develop a self-concept that enhances communication;
3. Engage in effective perception-checking;
4. Distinguish between debilitative and facilitative emotions and demonstrate; methods for managing them;
5. Recognize the role of nonverbal behavior in decoding messages;
6. Demonstrate the use of several effective listening response styles;
7. Identify and describe key aspects of interpersonal relationships;
8. Use feedback to confirm messages;
9. Demonstrate non-defensive responses to criticism; and,
10. Demonstrate the ability to make effective oral presentations.

**REQUIRED COURSE MATERIALS:**

**Textbook:** *Understanding Human Communication,* Alder, Ronald B., and George Rodman, New York: HBJ, Latest Edition

**SUPPLIES:**
Notebook paper
Spiral notebook
Ball point pens (black)
Pencils #2
Scantron forms
Liquid paper

## METHODS OF INSTRUCTION:

**Lecture:** Didactic presentations will include lecture, video and demonstrations.

**Method of Evaluation**: A student's grade will be based on multiple measures of performance. The assessment will measure development of independent critical thinking skills and will include evaluation of the student's ability to:

1. Perform the manipulative skills of the craft as required to satisfactorily complete assignments;
2. Apply theory to assignments;
3. Satisfactorily perform on written, oral, and practical examinations;
4. Satisfactorily perform on outside assignments, including writing assignments, and oral presentations;
5. Contribute to class discussions;
6. Maintain attendance per current policy; and,
7. Follow all rules and safety regulations.

## LECTURE OUTLINE

| Lecture Topics | Contact Hrs. |
|---|---|
| Orientation | 2 |
| Booklists | |
| Course Expectations | |
| Autograph Party | |
| A First Look at Interpersonal Relationships | 4 |
| A First Look | |
| Class Response (discussion) | |
| Coat of Arms (or Bag Speech) | |
| Evaluation | |
| The Self-Concept: Key to Communication | 4 |
| Examination of the Self-Concept | |
| Class Response (discussion) | |
| Presentations | |
| Evaluation | |
| Perception: What you see is what you get. | 4 |
| Lecture on Perception | |
| Class Response (discussion) | |
| Presentations | |
| Evaluation | |
| Emotions: Thinking and Feeling | 4 |
| Lecture on Emotions | |
| Class Response (discussion) | |
| Presentations | |
| Evaluation | |

| | |
|---|---|
| Midterm Exam | 2 |
| Nonverbal Communication | 4 |
| Lecture on Nonverbal Communication | |
| Class Response (discussion) | |
| Presentations | |
| Evaluation | |
| Listening vs. Hearing | 6 |
| Lecture on Listening | |
| Class Response (discussion) | |
| Presentations | |
| Evaluation | |
| Intimacy and Distance in Relationships | 4 |
| Lecture on Interpersonal Relationships | |
| Class Response (discussion) | |
| Presentations or other activity | |
| Evaluation | |
| Improving Communications Climates | 4 |
| Lecture on Communication Climates | |
| Class Response (discussion) | |
| Presentations or other activity | |
| Evaluation | |
| Resolving Interpersonal Conflicts | 6 |
| Lecture on Resolving Conflicts | |
| Class Response | |
| Presentations or other activity | |
| Evaluation | |
| OR | |
| A movie that incorporates interpersonal concepts | |
| Movie (1st 50 minutes) | |
| Movie (2nd 50 minutes) | |
| Complete movie | |
| Discuss movie | |
| Final Exam | 2 |
| Completion of Course, Student Conferences; | |
| Course Wrap–Up | 2 |
| **Total Lecture Hours** | **48** |

## COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part*

*foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

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The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES

- A. ***Resources:*** *Identifies, organizes, plans, and allocates resources*
  1. Allocates time to complete assigned tasks on schedule
  2. Determines and allocates required materials and resources for meeting objectives
  3. Evaluates skills, performance, and quality of work and provides feedback
- B. ***Interpersonal:*** *Works with others*
  1. Participates as a member of the team, contributing to group effort
  2. Provides individual assistance/direction to peers as requested
  3. Determines and meets expectations
  4. Exercises leadership qualities to effectively communicate ideas and make decisions.
  5. Negotiates resources in order to accomplish objectives
  6. Works well with all members of the class
- C. ***Information:*** *Acquires and uses information*
  1. Acquires and evaluates information
  2. Organizes and maintains information
  3. Interprets and communicates information
- D. ***Systems:*** *Understands complex inter-relationships*
  1. Understands and works well with social, organizational, and technological systems
  2. Monitors and corrects performance of system during operation
  3. Recommends modifications to system to improve performance
- E. ***Technology:*** *Works with a variety of technologies*
  1. Chooses relevant procedures, tools, and equipment
  2. Applies appropriate procedures and techniques to accomplish tasks
  3. Identifies or solves problems to maintain equipment

II. FOUNDATION SKILLS

- A. **Basic Skills:** Reads, writes, performs arithmetic and mathematical operations, listens and speaks

1. ***Reading:*** *Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*
   a. Demonstrates basic reading skills including abilities to perceive main ideas, draw appropriate conclusions, detect a sequence, locate answers, find facts, and infer from written texts
   b. Demonstrates course specific reading skills including abilities to read, interpret, and comprehend information from text and supplemental materials on a level to facilitate productive independent and group study
   c. Demonstrates ability to read, interpret, and utilize information from course specific instruments (i.e., charts, diagrams, graphs, schematics, blueprints, flow charts, etc.)
   d. Demonstrates ability to read, interpret, and follow schedules and procedural instructions in a timely and appropriate manner
   e. Demonstrates ability to choose and use most appropriate reading method (skim, scan, or read for comprehension) for materials
2. ***Writing:*** *Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*
   a. Demonstrates basic writing skills including abilities to produce written documents which conform with accepted grammatical and communication standards required for effective daily functioning
   b. Demonstrates effective written study skills including note taking, maintaining course specific journals, workbooks, manuals, etc.
   c. Demonstrates technical writing skills in preparing outlines, summaries, time lines, flow charts, diagrams, etc. appropriate to materials covered
   d. Demonstrates ability to complete all required writings in a timely, complete, and professional manner
   e. Demonstrates competence in subject matter through the organization and presentation of answers to required written assessments
3. ***Arithmetic/Mathematics:*** *Perform basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques*

a. Demonstrates proficiency in basic arithmetic functions including ability to add, subtract, multiply, and divide whole numbers, fractions, decimals, and percentages
b. Demonstrates ability to read, comprehend, and select appropriate math procedures to work basic math problems
c. Demonstrates ability to understand and perform multi-step computations
d. Demonstrates ability to read, interpret, and use standard measuring devices
e. Demonstrates ability to comprehend, retain, and utilize course specific measuring devices effectively
f. Demonstrates ability to understand, retain, and utilize higher mathematical formulas and functions required for course specific math performance
g. Demonstrates ability to appropriately transfer mathematical calculations and information from paper to machines

4. ***Listening:*** *Receives, attends to, interprets, and responds to verbal messages and other cues*
   a. Functions at minimal or above required hearing levels to receive, attend, interpret, and respond to verbal messages and instructions and to safely operate machinery
   b. Demonstrates ability to hear, comprehend, and appropriately follow directions
   c. Demonstrates auditory ability to hear, comprehend, and utilize verbal classroom as well as other auditory instruction
   d. Demonstrates ability to discriminate between essential and non-essential verbal information and react appropriately
   e. Demonstrates ability to focus and fine-tune listening skills to receive, interpret, and respond to various sounds
   f. Demonstrates ability and maturity to seek and receive additional individualized instruction as needed

5. ***Speaking:*** *Organizes ideas and communicates orally*
   a. Demonstrates appropriate listening and speaking skills in personal conversations
   b. Demonstrates ability to choose and organize appropriate words to effectively communicate
   c. Demonstrates ability to speak clearly and distinctly with appropriate volume, tone, and body language for situation

d. Demonstrates ability to spontaneously organize and present appropriate answers and/or short presentations for classroom and /or assessment purposes
e. Demonstrates ability to formulate, organize, and deliver major presentations to peers or groups
f. Demonstrates ability to speak effectively in one-on-one, small group, or large group presentations
g. Demonstrates ability to take responsibility for presentations

**B. Thinking Skills:** Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons

*1. **Decision Making:** Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*

a. Demonstrates ability to objectively assess personal strengths and weaknesses
b. Demonstrates ability to set realistic short-term and long-term goals
c. Demonstrates ability to recognize and distinguish between positive and negative alternatives
d. Demonstrates ability to identify potential pitfalls and take evasive actions
e. Demonstrates ability to objectively and responsibly evaluate alternatives by testing hypotheses and selecting most appropriate response
f. Demonstrates ability to profit from negative evaluations or mistakes by reformulating, redirecting, reconstructing, or retesting alternatives
g. Demonstrates maturity in taking responsibility for decisions

*2. **Problem Solving:** Recognizes problems and devises and implements plan of action*

a. Demonstrates ability to detect problem through observation, inquiry, or directive
b. Demonstrates ability to grasp appropriate overview and degree of seriousness of problem and to behave responsibly in situation
c. Demonstrates ability to generate alternatives or options for problem solution
d. Demonstrates ability to research options, assess and evaluate options, and determine appropriate and best solution
e. Demonstrates ability to initiate and effect solution
f. Demonstrates ability to take responsibility for outcomes

g. Demonstrates ability to effectively problem solve in individual, team, or group situations

3. ***Seeing Things In the Mind's Eye:*** *Organizes, and processes symbols, pictures, graphs, objects, and other information*
   a. Functions at minimum or above required visual levels in order to see, interpret, attend and respond to visual imagery and meet safety requirements for necessary machinery
   b. Demonstrates ability to read, interpret, and act upon signs, symbols, and other visual cues
   c. Demonstrates ability to visually discriminate in gross and fine imagery
   d. Demonstrates ability to visualize abstractly
   e. Demonstrates ability to apply visual imagery to applied tasks

4. ***Knowing How to Learn:*** *Use efficient learning techniques to acquire and apply new knowledge and skills*
   a. Demonstrates mastery of basic reading, math, and language skills through application
   b. Demonstrates ability to translate abstract theory into practical application
   c. Demonstrates ability to incorporate and generalize new learning into a sequential learning process
   d. Demonstrates knowledge of good study skills and learning habits

5. ***Reasoning:*** *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. Demonstrates use of simple logic
   b. Demonstrates ability to distinguish relationships
   c. Demonstrates ability to determine and isolate factors in relationships
   d. Demonstrates and applies knowledge through practice
   e. Recognizes that attitudes, skills, and practice are essential to productivity
   f. Demonstrates ability to discriminate between positive and negative, and act accordingly

C. **Personal Qualities:** Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty

1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
   a. Demonstrates ability to formulate realistic and useful short and long term goals and complete steps necessary to timely achieve goals

b. Demonstrates ability to make adjustments, revisions, and changes to achieve goals in a cooperative and polite manner
c. Demonstrates ability to focus on task at hand and work to completion
d. Demonstrates good work ethics through regular attendance, adequate classroom preparations, and appropriate use of classroom time
e. Demonstrates maturity to take responsibility for actions
f. Demonstrates ability to cooperatively work in individual, team, and group situations in timely and effective manner

2. *Self-Esteem: Believes in own self-worth and maintains a positive view of self*
   a. Presents a positive attitude toward tasks
   b. Demonstrates ability to separate work and personal behaviors
   c. Actively participates in learning opportunities by sharing knowledge and skills with peers and instructors
   d. Demonstrates ability to accept personal strengths and weaknesses and builds on positive behaviors
   e. Demonstrates ability to accept and use constructive criticism
   f. Accepts positive reinforcement in an appropriate manner
3. *Sociability: Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. Demonstrates appropriate and acceptable social behaviors in interactions
   b. Demonstrates ability to work cooperatively in individual, team, or group situations
   c. Demonstrates active interest in peers by offering assistance, sharing resources, and sharing knowledge in a professional and acceptable manner
   d. Demonstrates professional work ethic by separating work and personal social behaviors and acting accordingly
4. *Self-Management: Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
   a. Accepts personal strengths and weaknesses and uses the same for positive advancement
   b. Demonstrates ability to continuously set, assess, choose, and modify objectives as the situation demands in an appropriate manner
   c. Demonstrates ability to formulate and follow personal schedules

d. Demonstrates ability to wisely use classroom time
e. Demonstrates use of good study habits and skills
f. Demonstrates maturity to take responsibility for own actions

5. ***Integrity/Honesty:*** *Chooses ethical courses of action*
   a. Knows and demonstrates ability to distinguish between positive and negative behaviors
   b. Demonstrates honesty and integrity in working with peers and supervisors
   c. Takes full responsibility for personal actions
   d. Demonstrates understanding of consequences for negative ethical behaviors and accepts responsibility for same when applicable
   e. Demonstrates positive work and social ethics in undertakings

ENGL 134
01/051297

ENGL 1301

# MASTER PROGRAM

## Composition I

### Course Syllabus

**Total lecture hours: 48** **Total lab hours: 0** **Credit hours: 3**

**COURSE DESCRIPTION:**

Includes the process of composing essays, including pre-writing techniques, drafting, and revising and editing. Students write several essays of various types, in both in–class and out–of–class settings. Students critically analyze sample student and professional essays.

**PREREQUISITE:** **Writing Skills II or equivalent as determined by the English placement test**

**COURSE OBJECTIVES:**

After successful completion of this course, the students will be able to:

1. Select a clearly defined subject and address it to a specific audience in a logical manner;
2. Develop a unified and coherent theme that uses standard American grammar;
3. Use a handbook and a dictionary as resources for writing;
4. Compose written assignments using various strategies of informative and persuasive prose;
5. Compose well organized answers to questions posed on written examinations; and,
6. Critically analyze assigned essays.

**REQUIRED COURSE MATERIALS:**

**Textbook:** *Strategies for Successful Writing,* Reinking, James A., and Hart, Andrew W., Englewood Cliffs, N. J.: Prentice-Hall, Latest Edition

**Supplies:**
College Level Dictionary
Large package of Notebook Paper
Liquid Paper (one bottle)
Ballpoint pens (blue or black)
#2 Pencils
Package of Scantron Forms
Computer diskette

## METHODS OF INSTRUCTION:

**Lecture:** Didactic presentations will include lecture, video and demonstrations.

**Method of Evaluation:** A student's grade will be based on multiple measures of performance. The assessment will measure development of independent critical thinking skills and will include evaluation of the student's ability to:

1. Perform the manipulative skills of the craft as required to satisfactorily complete assignments;
2. Apply theory to assignments;
3. Satisfactorily perform on written, oral, and practical examinations;
4. Satisfactorily perform on outside assignments, including writing assignments, and oral presentations;
5. Contribute to class discussions;
6. Maintain attendance per current policy; and,
7. Follow all rules and safety regulations.

## LECTURE OUTLINE:

| Lecture Topics | Contact Hrs. |
|---|---|
| **Orientation** | **2** |
| A. Initial Writing Assignment | |
| B. Testing | |
| **Paragraph to Essay** | **5** |
| A. Purpose and Audience | |
| B. Planning and Organization of a Paragraph | |
| C. Expanding the Paragraph to an Essay | |
| D. Peer Editing | |
| **Types of Compositions** | **27** |
| A. Description | |
| B. Process * | |
| C. Comparison - Analogy * | |
| D. Classification * | |
| E. Cause and Effect * | |
| F. In–class Essay | |
| **Practical Applications** | **10** |
| A. Essay Examinations | |
| B. Critical Analysis | |
| **Conclusion** | **4** |
| A. Preparation for Final Exam | |
| B. Final Exam (required in order to receive a passing grade in the course) | |
| C. Student Conferences | |
| **Total Lecture Hours** | **48** |

*** may be persuasive or informative**

## COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

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The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES

- *A. Resources: Identifies, organizes, plans, and allocates resources*
  1. Allocates time to complete assigned tasks on schedule
  2. Determines and allocates required materials and resources for meeting objectives
  3. Evaluates skills, performance, and quality of work and provides feedback
- *B. Interpersonal: Works with others*
  1. Participates as a member of the team, contributing to group effort
  2. Provides individual assistance/direction to peers as requested
  3. Determines and meets expectations
  4. Exercises leadership qualities to effectively communicate ideas and make decisions.
  5. Negotiates resources in order to accomplish objectives
  6. Works well with all members of the class
- *C. Information: Acquires and uses information*
  1. Acquires and evaluates information
  2. Organizes and maintains information
  3. Interprets and communicates information
- *D. Systems: Understands complex inter-relationships*
  1. Understands and works well with social, organizational, and technological systems
  2. Monitors and corrects performance of system during operation
  3. Recommends modifications to system to improve performance
- *E. Technology: Works with a variety of technologies*
  1. Chooses relevant procedures, tools, and equipment
  2. Applies appropriate procedures and techniques to accomplish tasks
  3. Identifies or solves problems to maintain equipment

## II. FOUNDATION SKILLS

**A. Basic Skills:** Reads, writes, performs arithmetic and mathematical operations, listens and speaks

1. *Reading: Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*
   a. Demonstrates basic reading skills including abilities to perceive main ideas, draw appropriate conclusions, detect a sequence, locate answers, find facts, and infer from written texts
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   d. Demonstrates ability to read, interpret, and follow schedules and procedural instructions in a timely and appropriate manner
   e. Demonstrates ability to choose and use most appropriate reading method (skim, scan, or read for comprehension) for materials
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   a. Demonstrates basic writing skills including abilities to produce written documents which conform with accepted grammatical and communication standards required for effective daily functioning
   b. Demonstrates effective written study skills including note taking, maintaining course specific journals, workbooks, manuals, etc.
   c. Demonstrates technical writing skills in preparing outlines, summaries, time lines, flow charts, diagrams, etc. appropriate to materials covered
   d. Demonstrates ability to complete all required writings in a timely, complete, and professional manner
   e. Demonstrates competence in subject matter through the organization and presentation of answers to required written assessments
3. *Arithmetic/Mathematics: Perform basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques*

a. Demonstrates proficiency in basic arithmetic functions including ability to add, subtract, multiply, and divide whole numbers, fractions, decimals, and percentages
b. Demonstrates ability to read, comprehend, and select appropriate math procedures to work basic math problems
c. Demonstrates ability to understand and perform multi-step computations
d. Demonstrates ability to read, interpret, and use standard measuring devices
e. Demonstrates ability to comprehend, retain, and utilize course specific measuring devices effectively
f. Demonstrates ability to understand, retain, and utilize higher mathematical formulas and functions required for course specific math performance
g. Demonstrates ability to appropriately transfer mathematical calculations and information from paper to machines

4. ***Listening:*** *Receives, attends to, interprets, and responds to verbal messages and other cues*
   a. Functions at minimal or above required hearing levels to receive, attend, interpret, and respond to verbal messages and instructions and to safely operate machinery
   b. Demonstrates ability to hear, comprehend, and appropriately follow directions
   c. Demonstrates auditory ability to hear, comprehend, and utilize verbal classroom as well as other auditory instruction
   d. Demonstrates ability to discriminate between essential and non-essential verbal information and react appropriately
   e. Demonstrates ability to focus and fine-tune listening skills to receive, interpret, and respond to various sounds
   f. Demonstrates ability and maturity to seek and receive additional individualized instruction as needed

5. ***Speaking:*** *Organizes ideas and communicates orally*
   a. Demonstrates appropriate listening and speaking skills in personal conversations
   b. Demonstrates ability to choose and organize appropriate words to effectively communicate
   c. Demonstrates ability to speak clearly and distinctly with appropriate volume, tone, and body language for situation
   d. Demonstrates ability to spontaneously organize and present appropriate answers and/or short presentations for classroom and /or assessment purposes

e. Demonstrates ability to formulate, organize, and deliver major presentations to peers or groups
f. Demonstrates ability to speak effectively in one-on-one, small group, or large group presentations
g. Demonstrates ability to take responsibility for presentations

**B. Thinking Skills:** Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons

*1. **Decision Making:** Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*

a. Demonstrates ability to objectively assess personal strengths and weaknesses
b. Demonstrates ability to set realistic short-term and long-term goals
c. Demonstrates ability to recognize and distinguish between positive and negative alternatives
d. Demonstrates ability to identify potential pitfalls and take evasive actions
e. Demonstrates ability to objectively and responsibly evaluate alternatives by testing hypotheses and selecting most appropriate response
f. Demonstrates ability to profit from negative evaluations or mistakes by reformulating, redirecting, reconstructing, or retesting alternatives
g. Demonstrates maturity in taking responsibility for decisions

*2. **Problem Solving:** Recognizes problems and devises and implements plan of action*

a. Demonstrates ability to detect problem through observation, inquiry, or directive
b. Demonstrates ability to grasp appropriate overview and degree of seriousness of problem and to behave responsibly in situation
c. Demonstrates ability to generate alternatives or options for problem solution
d. Demonstrates ability to research options, assess and evaluate options, and determine appropriate and best solution
e. Demonstrates ability to initiate and effect solution
f. Demonstrates ability to take responsibility for outcomes
g. Demonstrates ability to effectively problem solve in individual, team, or group situations

*3. **Seeing Things In the Mind's Eye:** Organizes, and processes symbols, pictures, graphs, objects, and other information*

a. Functions at minimum or above required visual levels in order to see, interpret, attend and respond to visual imagery and meet safety requirements for necessary machinery
b. Demonstrates ability to read, interpret, and act upon signs, symbols, and other visual cues
c. Demonstrates ability to visually discriminate in gross and fine imagery
d. Demonstrates ability to visualize abstractly
e. Demonstrates ability to apply visual imagery to applied tasks

4. ***Knowing How to Learn:*** *Use efficient learning techniques to acquire and apply new knowledge and skills*
   a. Demonstrates mastery of basic reading, math, and language skills through application
   b. Demonstrates ability to translate abstract theory into practical application
   c. Demonstrates ability to incorporate and generalize new learning into a sequential learning process
   d. Demonstrates knowledge of good study skills and learning habits

5. ***Reasoning:*** *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. Demonstrates use of simple logic
   b. Demonstrates ability to distinguish relationships
   c. Demonstrates ability to determine and isolate factors in relationships
   d. Demonstrates and applies knowledge through practice
   e. Recognizes that attitudes, skills, and practice are essential to productivity
   f. Demonstrates ability to discriminate between positive and negative, and act accordingly

C. **Personal Qualities:** Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty

1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
   a. Demonstrates ability to formulate realistic and useful short and long term goals and complete steps necessary to timely achieve goals
   b. Demonstrates ability to make adjustments, revisions, and changes to achieve goals in a cooperative and polite manner
   c. Demonstrates ability to focus on task at hand and work to completion

d. Demonstrates good work ethics through regular attendance, adequate classroom preparations, and appropriate use of classroom time
e. Demonstrates maturity to take responsibility for actions
f. Demonstrates ability to cooperatively work in individual, team, and group situations in timely and effective manner

2. ***Self-Esteem:*** *Believes in own self-worth and maintains a positive view of self*
   a. Presents a positive attitude toward tasks
   b. Demonstrates ability to separate work and personal behaviors
   c. Actively participates in learning opportunities by sharing knowledge and skills with peers and instructors
   d. Demonstrates ability to accept personal strengths and weaknesses and builds on positive behaviors
   e. Demonstrates ability to accept and use constructive criticism
   f. Accepts positive reinforcement in an appropriate manner
3. ***Sociability:*** *Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. Demonstrates appropriate and acceptable social behaviors in interactions
   b. Demonstrates ability to work cooperatively in individual, team, or group situations
   c. Demonstrates active interest in peers by offering assistance, sharing resources, and sharing knowledge in a professional and acceptable manner
   d. Demonstrates professional work ethic by separating work and personal social behaviors and acting accordingly
4. ***Self-Management:*** *Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
   a. Accepts personal strengths and weaknesses and uses the same for positive advancement
   b. Demonstrates ability to continuously set, assess, choose, and modify objectives as the situation demands in an appropriate manner
   c. Demonstrates ability to formulate and follow personal schedules
   d. Demonstrates ability to wisely use classroom time
   e. Demonstrates use of good study habits and skills
   f. Demonstrates maturity to take responsibility for own actions
5. ***Integrity/Honesty:*** *Chooses ethical courses of action*
   a. Knows and demonstrates ability to distinguish between positive and negative behaviors

b. Demonstrates honesty and integrity in working with peers and supervisors
c. Takes full responsibility for personal actions
d. Demonstrates understanding of consequences for negative ethical behaviors and accepts responsibility for same when applicable
e. Demonstrates positive work and social ethics in undertakings

MATH 1314

# MASTER PROGRAM

## College Algebra

### Course Syllabus

**Total lecture hours: 48** **Total lab hours: 0** **Credit hours: 3**

COURSE DESCRIPTION:

Includes a study of quadratics; polynomial, rational, logarithmic, and exponential functions; systems of equations; progressions; sequences and series; matrices and determinants.

**PREREQUISITE:** **Intermediate Algebra or equivalent as determined by math placement exam**

COURSE OBJECTIVES:

After successful completion of this course, the students will be able to:

1. Solve linear, quadratic and absolute value equations and inequalities in one variable;
2. Define relation, function and inverse functions and graph linear, quadratic, polynomial and rational functions;
3. Solve systems of linear and nonlinear equations with two and three variables;
4. Define a matrix, perform operations with matrices, and find the inverse of a matrix;
5. Write the equation of a circle or parabola given specific characteristics and graph of both of these;
6. Determine the number of and nature of the roots of a polynomial equation and solve for them using synthetic division;
7. Define exponential and logarithmic functions, determine their properties and graphs and solve equations involving exponential and logarithmic functions; and,
8. Define the concepts of sequence and series and develop the properties for arithmetic, geometric and binomial series.

REQUIRED COURSE MATERIALS:

**Textbook:** *College Algebra,* Larson/Hostetler, D.C. Heath & Company, Latest Edition

**Supplies:** Scientific Calculator

## METHODS OF INSTRUCTION:

**Lecture:** Didactic presentations will include lecture and demonstrations.

**Method of Evaluation:** A student's grade will be based on multiple measures of performance. The assessment will measure development of independent critical thinking skills and will include evaluation of the student's ability to:

1. Perform the manipulative skills of the craft as required to satisfactorily complete assignments;
2. Apply theory to assignments;
3. Satisfactorily perform on written, oral, and practical examinations;
4. Satisfactorily perform on outside assignments, including writing assignments and oral presentations;
5. Contribute to class discussions;
6. Maintain attendance per current policy; and,
7. Follow all rules and safety regulations.

## TENTATIVE LECTURE OUTLINE:

| Lecture Topics | Contact Hrs. |
|---|---|
| **Introduction to College Algebra** | **1** |
| **Algebraic Equations and Inequalities** | **8** |
| A. Equations and Applications | |
| 1. Linear | |
| 2. Quadratic | |
| 3. Other | |
| a. Higher Degree | |
| b. Radical | |
| c. Rational | |
| d. Absolute Value | |
| B. Complex Numbers | |
| C. Inequalities | |
| 1. Linear | |
| 2. Quadratic | |
| 3. Cubic | |
| 4. Rational | |
| 5. Absolute value | |
| **Functions and Graphs** | **9** |
| A. The Cartesian Plane | |
| B. Graphing an Equation | |
| C. Lines in the Plane | |
| D. Functions | |
| 1. Definition and Notation | |
| 2. Graphs - include parabola | |
| 3. Combinations | |

a. Operations
b. Composition

4. Inverse

**Polynomial and Rational Functions: Graphs and Zeros** 10

A. Graphing and Finding Zeros
   1. Quadratic
   2. Higher Degree
B. Polynomial and Synthetic Division
C. Real Zeros
   1. Descarte's Rule of Signs
   2. Rational Zero Test
   3. Bounds
D. Complex Zeros and the Fundamental Theorem of Algebra
E. Approximation Techniques for Zeros
F. Graphing Rational Functions

**Exponential and Logarithmic Functions** 7

A. Exponential Functions
   1. Graphing
   2. Natural Base e
   3. Applications
B. Logarithmic Functions
   1. Graphing
   2. Natural Logarithmic Functions
   3. Change of Base
C. Properties of Logarithms
D. Solving Exponential and Logarithmic Equations
E. Applications

**Systems of Equations and Matrices** 6

A. Systems and Equations in Two Variables
   1. Graphing
   2. Substitution
   3. Elimination
B. Systems of Linear Equations in more than Two Variables
   1. Elimination in Row - echelon form
   2. Gaussian Elimination
   3. Gauss-Jordan Elimination
C. Operations with Matrices
D. The Inverse of a Matrix

**Sequence and Series** 6

A. Sequence and Summation
B. Arithmetic Sequences
C. Geometric Sequences and Series

D. The Binomial Theorem
**Final Exam** 2

**Total Lecture Hours** 48

## COURSE OBJECTIVES: SCANS COMPETENCIES

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The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES

*A. Resources: Identifies, organizes, plans, and allocates resources*
1. Allocates time to complete assigned tasks on schedule
2. Determines and allocates required materials and resources for meeting objectives
3. Evaluates skills, performance, and quality of work and provides feedback

*B. Interpersonal: Works with others*
1. Participates as a member of the team, contributing to group effort
2. Provides individual assistance/direction to peers as requested
3. Determines and meets expectations
4. Exercises leadership qualities to effectively communicate ideas and make decisions.
5. Negotiates resources in order to accomplish objectives
6. Works well with all members of the class

*C. Information: Acquires and uses information*
1. Acquires and evaluates information
2. Organizes and maintains information
3. Interprets and communicates information

*D. Systems: Understands complex inter-relationships*
1. Understands and works well with social, organizational, and technological systems
2. Monitors and corrects performance of system during operation
3. Recommends modifications to system to improve performance

E. *Technology: Works with a variety of technologies*
   1. Chooses relevant procedures, tools, and equipment
   2. Applies appropriate procedures and techniques to accomplish tasks
   3. Identifies or solves problems to maintain equipment

II. FOUNDATION SKILLS

A. **Basic Skills:** Reads, writes, performs arithmetic and mathematical operations, listens and speaks

   *1.* ***Reading:*** *Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*
      a. Demonstrates basic reading skills including abilities to perceive main ideas, draw appropriate conclusions, detect a sequence, locate answers, find facts, and infer from written texts
      b. Demonstrates course specific reading skills including abilities to read, interpret, and comprehend information from text and supplemental materials on a level to facilitate productive independent and group study
      c. Demonstrates ability to read, interpret, and utilize information from course specific instruments (i.e., charts, diagrams, graphs, schematics, blueprints, flow charts, etc.)
      d. Demonstrates ability to read, interpret, and follow schedules and procedural instructions in a timely and appropriate manner
      e. Demonstrates ability to choose and use most appropriate reading method (skim, scan, or read for comprehension) for materials

   *2.* ***Writing:*** *Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*
      a. Demonstrates basic writing skills including abilities to produce written documents which conform with accepted grammatical and communication standards required for effective daily functioning
      b. Demonstrates effective written study skills including note taking, maintaining course specific journals, workbooks, manuals, etc.
      c. Demonstrates technical writing skills in preparing outlines, summaries, time lines, flow charts, diagrams, etc. appropriate to materials covered

d. Demonstrates ability to complete all required writings in a timely, complete, and professional manner
e. Demonstrates competence in subject matter through the organization and presentation of answers to required written assessments

3. ***Arithmetic/Mathematics:*** *Perform basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques*
   a. Demonstrates proficiency in basic arithmetic functions including ability to add, subtract, multiply, and divide whole numbers, fractions, decimals, and percentages
   b. Demonstrates ability to read, comprehend, and select appropriate math procedures to work basic math problems
   c. Demonstrates ability to understand and perform multi-step computations
   d. Demonstrates ability to read, interpret, and use standard measuring devices
   e. Demonstrates ability to comprehend, retain, and utilize course specific measuring devices effectively
   f. Demonstrates ability to understand, retain, and utilize higher mathematical formulas and functions required for course specific math performance
   g. Demonstrates ability to appropriately transfer mathematical calculations and information from paper to machines
4. ***Listening:*** *Receives, attends to, interprets, and responds to verbal messages and other cues*
   a. Functions at minimal or above required hearing levels to receive, attend, interpret, and respond to verbal messages and instructions and to safely operate machinery
   b. Demonstrates ability to hear, comprehend, and appropriately follow directions
   c. Demonstrates auditory ability to hear, comprehend, and utilize verbal classroom as well as other auditory instruction
   d. Demonstrates ability to discriminate between essential and non-essential verbal information and react appropriately
   e. Demonstrates ability to focus and fine-tune listening skills to receive, interpret, and respond to various sounds
   f. Demonstrates ability and maturity to seek and receive additional individualized instruction as needed
5. ***Speaking:*** *Organizes ideas and communicates orally*

a. Demonstrates appropriate listening and speaking skills in personal conversations
b. Demonstrates ability to choose and organize appropriate words to effectively communicate
c. Demonstrates ability to speak clearly and distinctly with appropriate volume, tone, and body language for situation
d. Demonstrates ability to spontaneously organize and present appropriate answers and/or short presentations for classroom and /or assessment purposes
e. Demonstrates ability to formulate, organize, and deliver major presentations to peers or groups
f. Demonstrates ability to speak effectively in one-on-one, small group, or large group presentations
g. Demonstrates ability to take responsibility for presentations

**B. Thinking Skills:** Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons

*1. **Decision Making:** Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*

a. Demonstrates ability to objectively assess personal strengths and weaknesses
b. Demonstrates ability to set realistic short-term and long-term goals
c. Demonstrates ability to recognize and distinguish between positive and negative alternatives
d. Demonstrates ability to identify potential pitfalls and take evasive actions
e. Demonstrates ability to objectively and responsibly evaluate alternatives by testing hypotheses and selecting most appropriate response
f. Demonstrates ability to profit from negative evaluations or mistakes by reformulating, redirecting, reconstructing, or retesting alternatives
g. Demonstrates maturity in taking responsibility for decisions

*2. **Problem Solving:** Recognizes problems and devises and implements plan of action*

a. Demonstrates ability to detect problem through observation, inquiry, or directive
b. Demonstrates ability to grasp appropriate overview and degree of seriousness of problem and to behave responsibly in situation

c. Demonstrates ability to generate alternatives or options for problem solution
d. Demonstrates ability to research options, assess and evaluate options, and determine appropriate and best solution
e. Demonstrates ability to initiate and effect solution
f. Demonstrates ability to take responsibility for outcomes
g. Demonstrates ability to effectively problem solve in individual, team, or group situations

3. ***Seeing Things In the Mind's Eye:*** *Organizes, and processes symbols, pictures, graphs, objects, and other information*
   a. Functions at minimum or above required visual levels in order to see, interpret, attend and respond to visual imagery and meet safety requirements for necessary machinery
   b. Demonstrates ability to read, interpret, and act upon signs, symbols, and other visual cues
   c. Demonstrates ability to visually discriminate in gross and fine imagery
   d. Demonstrates ability to visualize abstractly
   e. Demonstrates ability to apply visual imagery to applied tasks

4. ***Knowing How to Learn:*** *Use efficient learning techniques to acquire and apply new knowledge and skills*
   a. Demonstrates mastery of basic reading, math, and language skills through application
   b. Demonstrates ability to translate abstract theory into practical application
   c. Demonstrates ability to incorporate and generalize new learning into a sequential learning process
   d. Demonstrates knowledge of good study skills and learning habits

5. ***Reasoning:*** *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. Demonstrates use of simple logic
   b. Demonstrates ability to distinguish relationships
   c. Demonstrates ability to determine and isolate factors in relationships
   d. Demonstrates and applies knowledge through practice
   e. Recognizes that attitudes, skills, and practice are essential to productivity
   f. Demonstrates ability to discriminate between positive and negative, and act accordingly

C. **Personal Qualities:** Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty

1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
   a. Demonstrates ability to formulate realistic and useful short and long term goals and complete steps necessary to timely achieve goals
   b. Demonstrates ability to make adjustments, revisions, and changes to achieve goals in a cooperative and polite manner
   c. Demonstrates ability to focus on task at hand and work to completion
   d. Demonstrates good work ethics through regular attendance, adequate classroom preparations, and appropriate use of classroom time
   e. Demonstrates maturity to take responsibility for actions
   f. Demonstrates ability to cooperatively work in individual, team, and group situations in timely and effective manner
2. ***Self-Esteem:*** *Believes in own self-worth and maintains a positive view of self*
   a. Presents a positive attitude toward tasks
   b. Demonstrates ability to separate work and personal behaviors
   c. Actively participates in learning opportunities by sharing knowledge and skills with peers and instructors
   d. Demonstrates ability to accept personal strengths and weaknesses and builds on positive behaviors
   e. Demonstrates ability to accept and use constructive criticism
   f. Accepts positive reinforcement in an appropriate manner
3. ***Sociability:*** *Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. Demonstrates appropriate and acceptable social behaviors in interactions
   b. Demonstrates ability to work cooperatively in individual, team, or group situations
   c. Demonstrates active interest in peers by offering assistance, sharing resources, and sharing knowledge in a professional and acceptable manner
   d. Demonstrates professional work ethic by separating work and personal social behaviors and acting accordingly
4. ***Self-Management:*** *Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*

a. Accepts personal strengths and weaknesses and uses the same for positive advancement
b. Demonstrates ability to continuously set, assess, choose, and modify objectives as the situation demands in an appropriate manner
c. Demonstrates ability to formulate and follow personal schedules
d. Demonstrates ability to wisely use classroom time
e. Demonstrates use of good study habits and skills
f. Demonstrates maturity to take responsibility for own actions

5. *Integrity/Honesty: Chooses ethical courses of action*
a. Knows and demonstrates ability to distinguish between positive and negative behaviors
b. Demonstrates honesty and integrity in working with peers and supervisors
c. Takes full responsibility for personal actions
d. Demonstrates understanding of consequences for negative ethical behaviors and accepts responsibility for same when applicable
e. Demonstrates positive work and social ethics in undertakings

MATH 1316

# MASTER PROGRAM

## Plane Trigonometry

### Course Syllabus

**Total lecture hours: 48** **Total lab hours: 0** **Credit hours: 3**

**COURSE DESCRIPTION:**

Includes topics in trigonometric functions, right triangles, trigonometric identities, radian measure, graphs of periodic functions, and oblique triangles.

**PREREQUISITE:** College Algebra

**COURSE OBJECTIVES:**

After successful completion of this course, the students will be able to:

1. Find the distance between two points;
2. Define the trigonometric functions;
3. Solve right triangles;
4. Find the function values of any angle;
5. State and use fundamental relationships of trigonometric functions;
6. Graph trigonometric functions;
7. Verify trigonometric identities;
8. Solve trigonometric equations;
9. Graph the inverse sine, cosine, and tangent functions;
10. Solve oblique triangles by the Law of Sines and the Law of Cosines;
11. Perform operations on the set of complex numbers in both rectangular and polar form;
12. Graph complex numbers; and,
13. Solve applied problems using vectors, radian measure, linear and angular velocity, arc length, area of a sector, trigonometric equations, and inverse functions.

**REQUIRED COURSE MATERIALS:**

**Textbook:** *Trigonometry,* Lial, Miller, & Hornsby, Scott Foresman Pub., Latest Edition

**Supplies:** Notebook Paper
Pencils
Scientific Calculator
Scantron form 882 w/100 answers

## METHODS OF INSTRUCTION:

**Lecture:** Didactic presentations will include lecture, video and demonstrations.

**Method of Evaluation:** A student's grade will be based on multiple measures of performance. The assessment will measure development of independent critical thinking skills and will include evaluation of the student's ability to:

1. Perform the manipulative skills of the craft as required to satisfactorily complete assignments;
2. Apply theory to assignments;
3. Satisfactorily perform on written, oral, and practical examinations;
4. Satisfactorily perform on outside assignments, including writing assignments, and oral presentations;
5. Contribute to class discussions;
6. Maintain attendance per current policy; and,
7. Follow all rules and safety regulations.

## LECTURE OUTLINE:

| Lecture Topics | Contact Hrs. |
|---|---|
| **Introduction to College Algebra** | **1** |
| **The Trigonometric Functions** | **11** |
| A. Basic Terms of Trigonometry | |
| B. Definitions of the Trigonometric Functions | |
| C. Trigonometric Functions of Acute Angles | |
| D. Trigonometric Functions of Special Angles | |
| E. Using Reference Angles and the Trigonometric Tables | |
| F. Solving Right Triangles | |
| G. Applications of Right Triangles | |
| **Radian Measure** | **5** |
| A. Radian Measure Conversions | |
| B. Formulae for Arc Length and Area of a Sector | |
| C. Linear and Angular Velocity Formulae | |
| D. Circular Functions of Real Numbers | |
| **Graphs of Trigonometric Functions** | **5** |
| A. Graphs of the Sine and Cosine Functions | |
| B. Horizontal Translations: Phase Shift | |
| C. Graphs of other Trigonometric Functions | |
| **Trigonometric Identities** | **7** |
| A. Fundamental Identities | |
| B. Verifying Trigonometric Identities | |
| C. Identities Involving Sums and Differences of Two Angles | |
| D. Double and Half-Angle Identities | |

| | |
|---|---|
| **Inverse Trigonometric Functions and Trigonometric Equations** | **4** |
| A. Inverse Functions | |
| B. Inverse Trigonometric Functions | |
| C. Trigonometric Equations | |
| D. Inverse Trigonometric Equations | |
| **Oblique Triangles and Vectors** | **7** |
| A. Law of Sines | |
| B. The Ambiguous Case: SSA | |
| C. Law of Cosines | |
| D. Vector Applications | |
| **Complex Numbers and Polar Coordinates** | **6** |
| A. Operations with Complex Numbers | |
| B. Trigonometric Form of a Complex Number | |
| C. Product and Quotient Theorems | |
| D. Powers and Roots of Complex Numbers | |
| **Final Exam** | **2** |
| **Total Lecture Hours** | **48** |

## COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

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The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES

- *A. Resources: Identifies, organizes, plans, and allocates resources*
  1. Allocates time to complete assigned tasks on schedule
  2. Determines and allocates required materials and resources for meeting objectives
  3. Evaluates skills, performance, and quality of work and provides feedback
- *B. Interpersonal: Works with others*
  1. Participates as a member of the team, contributing to group effort

2. Provides individual assistance/direction to peers as requested
3. Determines and meets expectations
4. Exercises leadership qualities to effectively communicate ideas and make decisions.
5. Negotiates resources in order to accomplish objectives
6. Works well with all members of the class

C. *Information: Acquires and uses information*
1. Acquires and evaluates information
2. Organizes and maintains information
3. Interprets and communicates information

D. *Systems: Understands complex inter-relationships*
1. Understands and works well with social, organizational, and technological systems
2. Monitors and corrects performance of system during operation
3. Recommends modifications to system to improve performance

E. *Technology: Works with a variety of technologies*
1. Chooses relevant procedures, tools, and equipment
2. Applies appropriate procedures and techniques to accomplish tasks
3. Identifies or solves problems to maintain equipment

## II. FOUNDATION SKILLS

A. **Basic Skills:** Reads, writes, performs arithmetic and mathematical operations, listens and speaks

*1.* ***Reading:*** *Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*

a. Demonstrates basic reading skills including abilities to perceive main ideas, draw appropriate conclusions, detect a sequence, locate answers, find facts, and infer from written texts

b. Demonstrates course specific reading skills including abilities to read, interpret, and comprehend information from text and supplemental materials on a level to facilitate productive independent and group study

c. Demonstrates ability to read, interpret, and utilize information from course specific instruments (i.e., charts, diagrams, graphs, schematics, blueprints, flow charts, etc.)

d. Demonstrates ability to read, interpret, and follow schedules and procedural instructions in a timely and appropriate manner

e. Demonstrates ability to choose and use most appropriate reading method (skim, scan, or read for comprehension) for materials

2. ***Writing:*** *Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*
   a. Demonstrates basic writing skills including abilities to produce written documents which conform with accepted grammatical and communication standards required for effective daily functioning
   b. Demonstrates effective written study skills including note taking, maintaining course specific journals, workbooks, manuals, etc.
   c. Demonstrates technical writing skills in preparing outlines, summaries, time lines, flow charts, diagrams, etc. appropriate to materials covered
   d. Demonstrates ability to complete all required writings in a timely, complete, and professional manner
   e. Demonstrates competence in subject matter through the organization and presentation of answers to required written assessments

3. ***Arithmetic/Mathematics:*** *Perform basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques*
   a. Demonstrates proficiency in basic arithmetic functions including ability to add, subtract, multiply, and divide whole numbers, fractions, decimals, and percentages
   b. Demonstrates ability to read, comprehend, and select appropriate math procedures to work basic math problems
   c. Demonstrates ability to understand and perform multi-step computations
   d. Demonstrates ability to read, interpret, and use standard measuring devices
   e. Demonstrates ability to comprehend, retain, and utilize course specific measuring devices effectively
   f. Demonstrates ability to understand, retain, and utilize higher mathematical formulas and functions required for course specific math performance
   g. Demonstrates ability to appropriately transfer mathematical calculations and information from paper to machines

4. ***Listening:*** *Receives, attends to, interprets, and responds to verbal messages and other cues*

a. Functions at minimal or above required hearing levels to receive, attend, interpret, and respond to verbal messages and instructions and to safely operate machinery
b. Demonstrates ability to hear, comprehend, and appropriately follow directions
c. Demonstrates auditory ability to hear, comprehend, and utilize verbal classroom as well as other auditory instruction
d. Demonstrates ability to discriminate between essential and non-essential verbal information and react appropriately
e. Demonstrates ability to focus and fine-tune listening skills to receive, interpret, and respond to various sounds
f. Demonstrates ability and maturity to seek and receive additional individualized instruction as needed

5. ***Speaking:*** *Organizes ideas and communicates orally*
a. Demonstrates appropriate listening and speaking skills in personal conversations
b. Demonstrates ability to choose and organize appropriate words to effectively communicate
c. Demonstrates ability to speak clearly and distinctly with appropriate volume, tone, and body language for situation
d. Demonstrates ability to spontaneously organize and present appropriate answers and/or short presentations for classroom and /or assessment purposes
e. Demonstrates ability to formulate, organize, and deliver major presentations to peers or groups
f. Demonstrates ability to speak effectively in one-on-one, small group, or large group presentations
g. Demonstrates ability to take responsibility for presentations

**B. Thinking Skills:** Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons

1. ***Decision Making:*** *Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*
a. Demonstrates ability to objectively assess personal strengths and weaknesses
b. Demonstrates ability to set realistic short-term and long-term goals
c. Demonstrates ability to recognize and distinguish between positive and negative alternatives
d. Demonstrates ability to identify potential pitfalls and take evasive actions

e. Demonstrates ability to objectively and responsibly evaluate alternatives by testing hypotheses and selecting most appropriate response
f. Demonstrates ability to profit from negative evaluations or mistakes by reformulating, redirecting, reconstructing, or retesting alternatives
g. Demonstrates maturity in taking responsibility for decisions

2. ***Problem Solving:*** *Recognizes problems and devises and implements plan of action*
   a. Demonstrates ability to detect problem through observation, inquiry, or directive
   b. Demonstrates ability to grasp appropriate overview and degree of seriousness of problem and to behave responsibly in situation
   c. Demonstrates ability to generate alternatives or options for problem solution
   d. Demonstrates ability to research options, assess and evaluate options, and determine appropriate and best solution
   e. Demonstrates ability to initiate and effect solution
   f. Demonstrates ability to take responsibility for outcomes
   g. Demonstrates ability to effectively problem solve in individual, team, or group situations

3. ***Seeing Things In the Mind's Eye:*** *Organizes, and processes symbols, pictures, graphs, objects, and other information*
   a. Functions at minimum or above required visual levels in order to see, interpret, attend and respond to visual imagery and meet safety requirements for necessary machinery
   b. Demonstrates ability to read, interpret, and act upon signs, symbols, and other visual cues
   c. Demonstrates ability to visually discriminate in gross and fine imagery
   d. Demonstrates ability to visualize abstractly
   e. Demonstrates ability to apply visual imagery to applied tasks

4. ***Knowing How to Learn:*** *Use efficient learning techniques to acquire and apply new knowledge and skills*
   a. Demonstrates mastery of basic reading, math, and language skills through application
   b. Demonstrates ability to translate abstract theory into practical application

c. Demonstrates ability to incorporate and generalize new learning into a sequential learning process
d. Demonstrates knowledge of good study skills and learning habits

5. ***Reasoning:*** *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. Demonstrates use of simple logic
   b. Demonstrates ability to distinguish relationships
   c. Demonstrates ability to determine and isolate factors in relationships
   d. Demonstrates and applies knowledge through practice
   e. Recognizes that attitudes, skills, and practice are essential to productivity
   f. Demonstrates ability to discriminate between positive and negative, and act accordingly

C. **Personal Qualities:** Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty

1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
   a. Demonstrates ability to formulate realistic and useful short and long term goals and complete steps necessary to timely achieve goals
   b. Demonstrates ability to make adjustments, revisions, and changes to achieve goals in a cooperative and polite manner
   c. Demonstrates ability to focus on task at hand and work to completion
   d. Demonstrates good work ethics through regular attendance, adequate classroom preparations, and appropriate use of classroom time
   e. Demonstrates maturity to take responsibility for actions
   f. Demonstrates ability to cooperatively work in individual, team, and group situations in timely and effective manner

2. ***Self-Esteem:*** *Believes in own self-worth and maintains a positive view of self*
   a. Presents a positive attitude toward tasks
   b. Demonstrates ability to separate work and personal behaviors
   c. Actively participates in learning opportunities by sharing knowledge and skills with peers and instructors
   d. Demonstrates ability to accept personal strengths and weaknesses and builds on positive behaviors

e. Demonstrates ability to accept and use constructive criticism
f. Accepts positive reinforcement in an appropriate manner

3. *Sociability: Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. Demonstrates appropriate and acceptable social behaviors in interactions
   b. Demonstrates ability to work cooperatively in individual, team, or group situations
   c. Demonstrates active interest in peers by offering assistance, sharing resources, and sharing knowledge in a professional and acceptable manner
   d. Demonstrates professional work ethic by separating work and personal social behaviors and acting accordingly

4. *Self-Management: Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
   a. Accepts personal strengths and weaknesses and uses the same for positive advancement
   b. Demonstrates ability to continuously set, assess, choose, and modify objectives as the situation demands in an appropriate manner
   c. Demonstrates ability to formulate and follow personal schedules
   d. Demonstrates ability to wisely use classroom time
   e. Demonstrates use of good study habits and skills
   f. Demonstrates maturity to take responsibility for own actions

5. *Integrity/Honesty: Chooses ethical courses of action*
   a. Knows and demonstrates ability to distinguish between positive and negative behaviors
   b. Demonstrates honesty and integrity in working with peers and supervisors
   c. Takes full responsibility for personal actions
   d. Demonstrates understanding of consequences for negative ethical behaviors and accepts responsibility for same when applicable
   e. Demonstrates positive work and social ethics in undertakings

# MASTER PROGRAM

## Occupational Mathematics

Course Syllabus

**Total lecture hours: 36** **Total lab hours: 24** **Credit hours: 4**

COURSE DESCRIPTION:

This course includes basic English and metric units of measurement, geometric principles, solution of basic algebraic equations, and solution of right triangles. Problems from specific occupational areas are stressed.

**PREREQUISITES:** **As determined by the MATH placement test**

COURSE OBJECTIVES:

Upon completion of this course, the student will:

1. Understand and use basic units of English and Metric systems of measurement, as well as convert from one type measurement to another;
2. Perform basic algebraic operations;
3. Evaluate formulae and manipulate formulae for any variable;
4. Recognize plane geometric shapes and some geometric applications to specific vocations; and,
5. Solve right triangle problems using basic trigonometry.

REQUIRED COURSE MATERIALS:

**Recommended Textbook:** *Mathematics for Machine Technology*, Smith, R.D., Delmar Publishers Inc., Latest Edition

**Supplies:** #2 Pencils
Notebook
Calculator: any Scientific calculator

METHODS OF INSTRUCTION:

**Lecture:** Didactic presentations will include lecture and demonstrations.

**Laboratory:** Students will demonstrate their mastery of the theories learned in class.

**Method of Evaluation:** A student's grade will be based on multiple measures of performance. The assessment will measure development of independent critical thinking skills and will include evaluation of the student's ability to:

1. Perform the manipulative skills of the craft as required to satisfactorily complete assignments;
2. Apply theory to assignments;
3. Satisfactorily perform on written, oral, and practical examinations;
4. Satisfactorily perform on outside assignments, including writing assignments and oral presentations;
5. Contribute to class discussions;
6. Maintain attendance per current policy; and,
7. Follow all rules and safety regulations.

**LECTURE OUTLINE:**

| Lecture Topics | Contact Hrs. |
|---|---|
| Introduction and Review | 3 |
| Linear Measurements | 2 |
| a. English Units | |
| b. Metric units | |
| c. Conversions | |
| Fundamentals of Algebra | 6 |
| a. Evaluation; Absolute Value | |
| b. Signed Numbers: Addition, Subtraction, Multiplication, Division | |
| c. Laws of Exponents | |
| d. Algebraic Expressions: Addition, Subtraction, Multiplication, Division | |
| Equations and Formulae | 6 |
| a. Solving Equations and Formulae | |
| b. Ratio and Proportion | |
| c. Writing Equations | |
| Geometric Shapes | 5 |
| a. Points, Lines, Angles | |
| b. Triangles | |
| c. Other Polygons and Circles | |
| d. Area and Volume Formula | |
| Trigonometry | 9 |
| a. Definitions of Trigonometric Functions | |
| b. Trigonometric Tables | |
| c. Solution of Right Triangles | |
| d. Applications | |
| TESTING | 5 |
| **Total Lecture Hours** | **36** |

**LAB OUTLINE:**

| Lab Topics | Contact Hrs. |
|---|---|
| Rounding Decimals | 3 |
| Expressing Fractions as Decimals and Decimals as Fractions Review | |
| Conversions between English and Metric units of measure | 1 |
| Applications of Evaluating Algebraic Expressions | 6 |
| Signed Number Drills | |
| Laws of Exponents | |
| Scientific Notation | |
| Review of Algebraic Expression | |
| Solving Equations with Combined Operations | 6 |
| Rearranging Formulae | |
| Writing Equations | |
| Inverse Proportion | |
| Review of Equations and Formulae | |
| Angles: Minutes to Decimal parts and vice versa | 6 |
| Applications of Triangles and other Polygons | |
| Applications of Circles | |
| Area and Volume Formulae | |
| Interpolation | 2 |
| Applications of Right Triangles | |
| **Total Lab Hours** | **24** |

## COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

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The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES

A. *Resources: Identifies, organizes, plans, and allocates resources*

1. Follows a schedule to complete assigned tasks on time
2. Provides a self-evaluation of performance based on the time and quality of work

B. *Interpersonal: Works with others*
   1. Participates in classroom dialogue, contributing to group effort in problem solving
   2. Works well with all members of the class.

C. *Information: Acquires and uses information*
   1. Applies mathematical solutions to problems assigned
   2. Organizes and maintains lecture notebook and assignment notebook
   3. Communicates/interprets information by participating in classroom dialogue
   4. Uses 050 computer tutorials as necessary

D. *Systems: Understands complex inter-relationships*
   1. Applies a systematic approach to solving mathematical problems
   2. Develops an understanding of mathematical system complexity with applications to algebra, geometry, and trigonometric equation solving

E. *Technology: Works with a variety of technologies*
   1. Selects appropriate calculator to meet the needs of the course
   2. Selects appropriate methods to solve mathematical problems
   3. Selects appropriate measurement procedures
   4. Applies mathematical problem solving skills using a scientific calculator

## II. FOUNDATION SKILLS

A. **Basic Skills:** Reads, writes, performs arithmetic and mathematical operations, listens and speaks

   *1.* ***Reading:*** *Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*
      a. Interprets word problems, tables, graphs, and drawings to identify presented problem(s)
      b. Reads and studies textbook, available tutorials, and video tapes
      c. Uses available tutorials in the laboratory as needed

   *2.* ***Writing:*** *Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*
      a. Communicates problem solving skills by solving mathematical problems in writing using presented information
      b. Maintains a lecture notebook
      c. Completes all written assignments

3. ***Arithmetic/Mathematics:*** *Perform basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques*
   a. Performs applied computations of arithmetic, algebra, geometry, and trigonometry
   b. Performs applied computations of measurement conversions
4. ***Listening:*** *Receives, attends to, interprets, and responds to verbal messages and other cues*
   a. Assimilates classroom instruction
   b. Interprets and assimilates video instruction
   c. Observe laboratory demonstrations
   d. Seeks and receives individualized instruction in the laboratory
   e. Participates as an active listener in classroom instruction
5. ***Speaking:*** *Organizes ideas and communicates orally*
   a. Participates in classroom discussions
   b. Organizes ideas and communicates specific questions to the instructor
   c. Orally affirms understanding of a concept, procedure, or required mathematical skill
   d. Communicates with peers

**B. Thinking Skills:** Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons.

1. ***Creative Thinking:*** *Generates new ideas*
   a. Develops new ideas for approaching problem solving
   b. Participates in the brain-storming process
   c. Participates in group problem solving process
   d. Practices the team approach to problem solving
2. ***Decision Making:*** *Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*
   a. Identifies personal goals
   b. Selects specific math applications
3. ***Problem Solving:*** *Recognizes problems and devises and implements plan of action*
   a. Makes daily accommodations to stay on schedule
   b. Seeks additional instruction/clarification for assignment completion
   c. Balances social and academic life/responsibilities
   d. Accepts responsibility
4. ***Seeing Things In the Mind's Eye:*** *Organizes, and processes symbols, pictures, graphs, objects, and other information*

a. Prepares sketches, graphs, and tables to assist in understanding word problems
b. Interprets word problems
c. Assimilates arithmetic problems in class
d. Interprets non-verbal communication in the classroom

5. ***Knowing How to Learn:*** *Use efficient learning techniques to acquire and apply new knowledge and skills*
   a. Recognizes relevant information to solve specific problem(s)
   b. Identifies given data and applies appropriate equations
   c. Demonstrates mastery of basic math skills
   d. Uses sequential math skills to support mastery of new skills
   e. Thinks through the problem mentally before selecting appropriate formula(e)/equation(s)

6. ***Reasoning:*** *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. Understands that the ability to apply mathematics requires practice
   b. Understands the necessity to perform math as applied to specific technology
   c. Selects appropriate mathematical application after considering all given data

C. **Personal Qualities:** Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty

1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
   a. Develops an understanding that in order to be successful in mathematics, preparation for the day's work is necessary
   b. Develops an understanding that classroom attendance is essential for success in the course
   c. Accepts the responsibility for active participation in class

2. ***Self-Esteem:*** *Believes in own self-worth and maintains a positive view of self*
   a. Learns to take pride in his or her work through positive reinforcement
   b. Sees himself or herself as an asset to the class through continued contributions to the group and a shared common goal
   c. Understands that an individual with a positive attitude and the belief in their own abilities will systematically seek solutions and be a valuable employee

d. Accepts shared common goals of the class and views each individual as an asset to the group

3. *Sociability: Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. Assists classmates in improving mathematical skills
   b. Assists students with special needs as a peer mentor
   c. Shares laboratory resources
   d. Assists classmates in understanding math applications in a group

4. *Self-Management: Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
   a. Maintains a record of academic achievement (individual grade book)
   b. Accepts the responsibility for self-management
   c. Sets goals and complete assigned tasks

5. *Integrity/Honesty: Chooses ethical courses of action*
   a. Accepts the responsibility for own actions
   b. Exhibits personal honesty at all times
   c. Accepts the challenge of doing your own work in the laboratory, during examination, and on outside assignments
   d. Understands the consequences of unethical behavior

PHYS 1310

# MASTER PROGRAM

## Fundamentals of Physics

Course Syllabus

**Total lecture hours: 48** **Total lab hours: 0** **Credit hours: 3**

COURSE DESCRIPTION:

An algebra-level, problem–oriented course which presents special topics in classical physics, such as basic mechanics, optics, acoustics, or electricity.

**PREREQUISITES:** **Intermediate Algebra**

COURSE OBJECTIVES:

After successful completion of this course, the students will be able to:,

1. Demonstrate comprehension of ideas and concepts of physics of mechanics, energy, and motion;
2. Demonstrate the use of prerequisite mathematical skills and application of concepts in problem solving;
3. Apply problem solving techniques and quantitatively solve physics problems in topics of mechanics, energy; and,
4. Evaluate the assumptions and results of an analytically solved problem in terms of realistic expectations of experimental agreement.

RECOMMENDED COURSE MATERIALS:

**Textbook:** *Fundamentals of College Physics,* Nolan, Peter, J., W.C. Brown Publishers, Latest Edition

**Supplies:**
Scientific Calculator
Notebook paper
Metric ruler
Protractor (1 degree increments)
Graph paper
Pencils

METHODS OF INSTRUCTION:

**Lecture:** Didactic presentations will include lecture and demonstrations.

**Method of Evaluation:** A student's grade will be based on multiple measures of performance. The assessment will measure development of independent critical thinking skills and will include evaluation of the student's ability to:

1. Perform the manipulative skills of the craft as required to satisfactorily complete assignments;
2. Apply theory to assignments;
3. Satisfactorily perform on written, oral, and practical examinations;
4. Satisfactorily perform on outside assignments, including writing assignments and oral presentations;
5. Contribute to class discussions; and,
6. Maintain attendance per current policy; and,
7. Follow all rules and safety regulations.

LECTURE OUTLINE:

| Lecture Topics | Contact Hrs. |
|---|---|
| **Technical Mathematics and Measurement** | **4** |
| A. Systems of Units and Measure | |
| B. Conversion of units and physical dimensions | |
| C. Significant figures and Scientific Notation | |
| D. Coordinate systems and Geometry review | |
| **Forces and Vectors** | **6** |
| A. Vector and scaler quantities | |
| B. Addition of vectors and resultant force | |
| C. Right Triangles and Sine, Cosine, and Tangent ratios | |
| D. Vector components and component addition | |
| **Equilibrium and Friction** | **6** |
| A. Newton's First and Third Laws of Motion | |
| B. Free-Body Diagrams | |
| C. Equilibrium of concurrent force systems | |
| D. Equilibrium and vector components | |
| E. Friction and Normal Force | |
| **Torque and Rotational Equilibrium** | **5** |
| A. Moment Arms | |
| B. Torque due to a force | |
| C. Resultant Torque and Rotational Equilibrium | |
| D. Center of Gravity | |
| **Uniformly Accelerated Motion** | **5** |
| A. Speed and Velocity | |
| B. Accelerated Motion | |
| C. Linear Equations and Motion | |
| D. Solution of accelerated problems | |
| E. Gravity and freely falling bodies | |
| **Force and Acceleration** | **5** |
| A. Newton's Second law of Motion | |

| | | |
|---|---|---|
| B. | Relationship between Weight and Mass | |
| C. | Application of Newton's Second Law to Single Body Problems | |
| D. | Problem Solving Techniques | |
| **Energy and Momentum** | | **6** |
| A. | Work and Resultant Work | |
| B. | Work and Kinetic Energy | |
| C. | Potential Energy | |
| D. | Conservation of Energy | |
| E. | Power | |
| F. | Impulse and Momentum | |
| G. | Law of Conservation of Momentum | |
| **Rotational Motion** | | **3** |
| A. | Motion in a Circular Path | |
| B. | Centripetal Acceleration | |
| C. | Centripetal Force | |
| D. | Friction and the Centripetal Force | |
| **Exams and Review** | | **8** |
| | **Total Lecture Hours** | **48** |

## COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

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The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES

- *A. Resources: Identifies, organizes, plans, and allocates resources*
  1. Allocates time to complete assigned tasks on schedule
  2. Determines and allocates required materials and resources for meeting objectives
  3. Evaluates skills, performance, and quality of work and provides feedback
- *B. Interpersonal: Works with others*

1. Participates as a member of the team, contributing to group effort
2. Provides individual assistance/direction to peers as requested
3. Determines and meets expectations
4. Exercises leadership qualities to effectively communicate ideas and make decisions.
5. Negotiates resources in order to accomplish objectives
6. Works well with all members of the class

C. *Information: Acquires and uses information*
1. Acquires and evaluates information
2. Organizes and maintains information
3. Interprets and communicates information

D. *Systems: Understands complex inter-relationships*
1. Understands and works well with social, organizational, and technological systems
2. Monitors and corrects performance of system during operation
3. Recommends modifications to system to improve performance

E. *Technology: Works with a variety of technologies*
1. Chooses relevant procedures, tools, and equipment
2. Applies appropriate procedures and techniques to accomplish tasks
3. Identifies or solves problems to maintain equipment

## II. FOUNDATION SKILLS

A. **Basic Skills:** Reads, writes, performs arithmetic and mathematical operations, listens and speaks

*1.* ***Reading:*** *Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*

a. Demonstrates basic reading skills including abilities to perceive main ideas, draw appropriate conclusions, detect a sequence, locate answers, find facts, and infer from written texts

b. Demonstrates course specific reading skills including abilities to read, interpret, and comprehend information from text and supplemental materials on a level to facilitate productive independent and group study

c. Demonstrates ability to read, interpret, and utilize information from course specific instruments (i.e., charts, diagrams, graphs, schematics, blueprints, flow charts, etc.)

d. Demonstrates ability to read, interpret, and follow schedules and procedural instructions in a timely and appropriate manner

e. Demonstrates ability to choose and use most appropriate reading method (skim, scan, or read for comprehension) for materials

2. ***Writing:*** *Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*
   a. Demonstrates basic writing skills including abilities to produce written documents which conform with accepted grammatical and communication standards required for effective daily functioning
   b. Demonstrates effective written study skills including note taking, maintaining course specific journals, workbooks, manuals, etc.
   c. Demonstrates technical writing skills in preparing outlines, summaries, time lines, flow charts, diagrams, etc. appropriate to materials covered
   d. Demonstrates ability to complete all required writings in a timely, complete, and professional manner
   e. Demonstrates competence in subject matter through the organization and presentation of answers to required written assessments

3. ***Arithmetic/Mathematics:*** *Perform basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques*
   a. Demonstrates proficiency in basic arithmetic functions including ability to add, subtract, multiply, and divide whole numbers, fractions, decimals, and percentages
   b. Demonstrates ability to read, comprehend, and select appropriate math procedures to work basic math problems
   c. Demonstrates ability to understand and perform multi-step computations
   d. Demonstrates ability to read, interpret, and use standard measuring devices
   e. Demonstrates ability to comprehend, retain, and utilize course specific measuring devices effectively
   f. Demonstrates ability to understand, retain, and utilize higher mathematical formulas and functions required for course specific math performance
   g. Demonstrates ability to appropriately transfer mathematical calculations and information from paper to machines

4. ***Listening:*** *Receives, attends to, interprets, and responds to verbal messages and other cues*

a. Functions at minimal or above required hearing levels to receive, attend, interpret, and respond to verbal messages and instructions and to safely operate machinery
b. Demonstrates ability to hear, comprehend, and appropriately follow directions
c. Demonstrates auditory ability to hear, comprehend, and utilize verbal classroom as well as other auditory instruction
d. Demonstrates ability to discriminate between essential and non-essential verbal information and react appropriately
e. Demonstrates ability to focus and fine-tune listening skills to receive, interpret, and respond to various sounds
f. Demonstrates ability and maturity to seek and receive additional individualized instruction as needed

5. *Speaking: Organizes ideas and communicates orally*
a. Demonstrates appropriate listening and speaking skills in personal conversations
b. Demonstrates ability to choose and organize appropriate words to effectively communicate
c. Demonstrates ability to speak clearly and distinctly with appropriate volume, tone, and body language for situation
d. Demonstrates ability to spontaneously organize and present appropriate answers and/or short presentations for classroom and /or assessment purposes
e. Demonstrates ability to formulate, organize, and deliver major presentations to peers or groups
f. Demonstrates ability to speak effectively in one-on-one, small group, or large group presentations
g. Demonstrates ability to take responsibility for presentations

B. **Thinking Skills:** Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons

1. ***Decision Making:*** *Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*
a. Demonstrates ability to objectively assess personal strengths and weaknesses
b. Demonstrates ability to set realistic short-term and long-term goals
c. Demonstrates ability to recognize and distinguish between positive and negative alternatives
d. Demonstrates ability to identify potential pitfalls and take evasive actions

e. Demonstrates ability to objectively and responsibly evaluate alternatives by testing hypotheses and selecting most appropriate response
f. Demonstrates ability to profit from negative evaluations or mistakes by reformulating, redirecting, reconstructing, or retesting alternatives
g. Demonstrates maturity in taking responsibility for decisions

2. ***Problem Solving:*** *Recognizes problems and devises and implements plan of action*
   a. Demonstrates ability to detect problem through observation, inquiry, or directive
   b. Demonstrates ability to grasp appropriate overview and degree of seriousness of problem and to behave responsibly in situation
   c. Demonstrates ability to generate alternatives or options for problem solution
   d. Demonstrates ability to research options, assess and evaluate options, and determine appropriate and best solution
   e. Demonstrates ability to initiate and effect solution
   f. Demonstrates ability to take responsibility for outcomes
   g. Demonstrates ability to effectively problem solve in individual, team, or group situations

3. ***Seeing Things In the Mind's Eye:*** *Organizes, and processes symbols, pictures, graphs, objects, and other information*
   a. Functions at minimum or above required visual levels in order to see, interpret, attend and respond to visual imagery and meet safety requirements for necessary machinery
   b. Demonstrates ability to read, interpret, and act upon signs, symbols, and other visual cues
   c. Demonstrates ability to visually discriminate in gross and fine imagery
   d. Demonstrates ability to visualize abstractly
   e. Demonstrates ability to apply visual imagery to applied tasks

4. ***Knowing How to Learn:*** *Use efficient learning techniques to acquire and apply new knowledge and skills*
   a. Demonstrates mastery of basic reading, math, and language skills through application
   b. Demonstrates ability to translate abstract theory into practical application

c. Demonstrates ability to incorporate and generalize new learning into a sequential learning process
d. Demonstrates knowledge of good study skills and learning habits

5. ***Reasoning:*** *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. Demonstrates use of simple logic
   b. Demonstrates ability to distinguish relationships
   c. Demonstrates ability to determine and isolate factors in relationships
   d. Demonstrates and applies knowledge through practice
   e. Recognizes that attitudes, skills, and practice are essential to productivity
   f. Demonstrates ability to discriminate between positive and negative, and act accordingly

C. **Personal Qualities:** Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty

1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
   a. Demonstrates ability to formulate realistic and useful short and long term goals and complete steps necessary to timely achieve goals
   b. Demonstrates ability to make adjustments, revisions, and changes to achieve goals in a cooperative and polite manner
   c. Demonstrates ability to focus on task at hand and work to completion
   d. Demonstrates good work ethics through regular attendance, adequate classroom preparations, and appropriate use of classroom time
   e. Demonstrates maturity to take responsibility for actions
   f. Demonstrates ability to cooperatively work in individual, team, and group situations in timely and effective manner

2. ***Self-Esteem:*** *Believes in own self-worth and maintains a positive view of self*
   a. Presents a positive attitude toward tasks
   b. Demonstrates ability to separate work and personal behaviors
   c. Actively participates in learning opportunities by sharing knowledge and skills with peers and instructors
   d. Demonstrates ability to accept personal strengths and weaknesses and builds on positive behaviors

e. Demonstrates ability to accept and use constructive criticism
f. Accepts positive reinforcement in an appropriate manner

3. *Sociability: Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. Demonstrates appropriate and acceptable social behaviors in interactions
   b. Demonstrates ability to work cooperatively in individual, team, or group situations
   c. Demonstrates active interest in peers by offering assistance, sharing resources, and sharing knowledge in a professional and acceptable manner
   d. Demonstrates professional work ethic by separating work and personal social behaviors and acting accordingly

4. *Self-Management: Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
   a. Accepts personal strengths and weaknesses and uses the same for positive advancement
   b. Demonstrates ability to continuously set, assess, choose, and modify objectives as the situation demands in an appropriate manner
   c. Demonstrates ability to formulate and follow personal schedules
   d. Demonstrates ability to wisely use classroom time
   e. Demonstrates use of good study habits and skills
   f. Demonstrates maturity to take responsibility for own actions

5. *Integrity/Honesty: Chooses ethical courses of action*
   a. Knows and demonstrates ability to distinguish between positive and negative behaviors
   b. Demonstrates honesty and integrity in working with peers and supervisors
   c. Takes full responsibility for personal actions
   d. Demonstrates understanding of consequences for negative ethical behaviors and accepts responsibility for same when applicable
   e. Demonstrates positive work and social ethics in undertakings

PSY 112

# MASTER PROGRAM

## Human Relations

### Course Syllabus

**Total lecture hours: 24** **Total lab hours: 24** **Credit hours: 3**

COURSE DESCRIPTION:

A human relations course that deals with the dynamics involved in developing and maintaining positive/productive interpersonal and work relationships. Experiential group exercises give students an opportunity to immediately apply and practice the learned skills.

PREREQUISITES: NONE

COURSE OBJECTIVES:

After successful completion of this course, the student will be able to:

1. Demonstrate an understanding of the factors that help and hinder effective interactions in their work and personal environments;
2. Demonstrate knowledge of the skills necessary for a cooperative work environment that facilitates the attainment of personal and organizational goals;
3. Demonstrate the skills necessary to cope with the complex ever-changing work and social environments; and,
4. Demonstrate an increased understanding of the behaviors that will help them become successful in predicting, understanding, and influencing the outcome of their interactions with others.

REQUIRED COURSE MATERIALS:

**Recommended Textbook:** *Human Relations*, Dalton, M., Hoyle, D.G., Watts, M.W., South Western Pub. Co., Latest Edition

**Supplies:** Scantron Answer Sheets
Chatsworth Cards (Dr. Doody only)
2 pencils (#2)

METHODS OF INSTRUCTION:

**Lecture:** Didactic presentations will include lecture and demonstrations.

**Laboratory:** Students will demonstrate their mastery of the theories learned in class.

**Method of Evaluation:** A student's grade will be based on multiple measures of performance. The assessment will measure development of independent critical thinking skills and will include evaluation of the student's ability to:

1. Perform the manipulative skills of the craft as required to satisfactorily complete assignments;
2. Apply theory to assignments;
3. Satisfactorily perform on written, oral, and practical examinations;
4. Satisfactorily perform on outside assignments, including writing assignments and oral presentations;
5. Contribute to class discussions;
6. Maintain attendance per current policy; and,
7. Follow all rules and safety regulations.

## LECTURE OUTLINE

| Lecture Topics | Contact Hrs. |
|---|---|
| Course Orientation; Introduction to Human Relations | 2 |
| Psychology of People | 4 |
| Perception | |
| Communication | |
| Group Dynamics | |
| Putting Human Resources to Work | 6 |
| Organizational Structure | |
| Motivation | |
| Goal Setting and Job Performance | |
| Change Dynamics | |
| Power, Decision Making and the Group | 4 |
| Power | |
| Problem Solving, Decision Making and Creativity | |
| Team-building | |
| Laws and Ethics | 4 |
| Employee Rights | |
| Substance Abuse | |
| Ethics | |
| Your Growth and Future | 4 |
| Business Etiquette | |
| Wellness | |
| Transition to the Future | |
| **Total Lecture Hours** | **24** |

## LAB OUTLINE:

| Lab Topics | Contact Hrs. |
|---|---|
| Psychology of People | 4 |
| Putting Human Resources to Work | 4 |

| | | |
|---|---|---|
| Power, Decision Making and the Group | | 4 |
| Laws and Ethics | | 4 |
| Your Growth and Future | | 4 |
| Exams | | 4 |
| | **Total Lab Hours** | **24** |

## COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

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The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES

A. *Resources: Identifies, organizes, plans, and allocates resources*
   1. Follows a schedule to complete assigned tasks on time
   2. Assesses personal strengths and weaknesses and develops appropriate career goals

B. *Interpersonal: Works with others.*
   1. Works cooperatively with others and contributes to the group process with ideas, suggestions and effort
   2. Provides feedback to peers and instructors
   3. Demonstrates good human relation skills in interpersonal interactions
   4. Communicates thoughts, feelings, and ideas, and when appropriate, responsibly challenges existing procedures, policies, or authority
   5. Uses authority appropriately
   6. Resolves conflict
   7. Works well with individuals from a variety of ethnic, social and educational backgrounds in completing assigned tasks

C. *Information: Acquires and uses information*
   1. Solves problems
   2. Uses critical thinking skills in making decisions
   3. Selects and analyzes information and communicates the results to others using oral, written, graphics, pictorial, or multimedia methods

D. *Systems: Understands complex inter-relationships*

1. Demonstrates knowledge of organizational structure and uses the chain of command

## II. FOUNDATION SKILLS

**A. Basic Skills:** Reads, writes, performs arithmetic and mathematical operations, listens and speaks

*1. Reading: Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*

a. Reads and studies textbook
b. Completes reading assignments
c. Interprets reading assignments
d. Interprets/follows class schedule

*2. Writing: Communicates thoughts, ideas, information, and messages in writing; and creates documents, such as letters, directions, manuals, and flow charts*

a. Completes written assignments
b. Takes class notes

*3. Listening: Receives, attends to, interprets, and responds to verbal messages and other cues*

a. Receives/interprets oral messages via didactic presentations
b. Responds to oral messages
c. Confirms oral message interpretations both in and out of class
d. Makes appropriate behavior response to oral messages

*4. Speaking: Organizes ideas and communicates orally*

a. Participates in classroom discussions
b. Organizes ideas and communicates specific questions to the instructor
c. Orally affirms understanding of a concept, procedure, or required skill
d. Communicates effectively with peers

**B. Thinking Skills:** Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons

*1. Creative Thinking: Generates new ideas*

a. Develops new ideas for approaching problem solving
b. Participates in the brainstorming process
c. Participates in group problem solving
d. Practices the team approach to problem solving

*2. Decision Making: Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*

a. Generates a personal and career development plan
b. Assesses personal growth and development areas

c. Generates a list of career alternatives and chooses the most appropriate career choices based upon personal attributes
d. Identifies actions required to accomplish personal goals

3. ***Problem Solving:*** *Recognizes problems and devises and implements plan of action*
   a. Makes daily accommodations to stay on schedule
   b. Seeks additional instruction/clarification for assignment completion
   c. Balances social and academic life/responsibilities
   d. Accepts responsibility
   e. Demonstrates a creative solution to a problem in writing
4. ***Seeing Things In the Mind's Eye:*** *Organizes and processes symbols, pictures, graphs, objects, and other information*
   a. Participates in activities that encourage accepting responsibility for her/his career success
   b. Participates in activities to strengthen belief in self-worth and encourage proactive/responsible choices
5. ***Knowing How to Learn:*** *Use efficient learning techniques to acquire and apply new knowledge and skills*
   a. Develops techniques for adapting learning style for differences in teaching styles
   b. Utilizes techniques for creative thinking
   c. Develops strategies for problem solving
6. ***Reasoning:*** *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. Performs self analysis of effective learning styles
   b. Develops techniques for adapting learning style for differences in teaching styles
   c. Performs critical thinking
   d. Develops effective memory techniques

C. **Personal Qualities:** Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty

1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
   a. Develops stress management techniques that facilitate and encourage goal attainment
   b. Accepts responsibility for behavior and develops a proactive attitude turning individual strengths into academic assets
2. ***Self-Esteem:*** *Believes in own self-worth and maintains a positive view of self*
   a. Provides positive feedback/encouragement
   b. Provides individual mentoring/counseling to support the educational process

c. Develops interpersonal skills that will allow him/her to interact with confidence and project a positive self-image
d. Practices positive peer feedback during daily exchange, in rotating diads; this activity is processed by the entire class and feelings are explored every class meeting

3. *Sociability: Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. Participates in discussions of cultural diversity and its benefits
   b. Discusses and demonstrates strategies for effective communication across cultures
   c. Participates in discussions of gender diversity and sexism
   d. Participates in discussions of different learning styles and disabilities
   e. Adopts an attitude of tolerance

4. *Self-Management: Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
   a. Assesses self/personal goals and monitors individual progress
   b. Performs goal setting activities
   c. Conducts self assessment of performance on quizzes

5. *Integrity/Honesty: Chooses ethical courses of action*
   a. Meets specific criteria standards to successfully complete the course
   b. Demonstrates honesty and integrity while grading quizzes
   c. Accepts ethical and honest courses of action by example
   d. Explores and formulates professional and personal ethical standards

PSYC 1100

# MASTER PROGRAM

## College Success Skills

### Course Syllabus

**Total lecture hours: 12** **Total lab hours: 0** **Credit hours: 1**

**COURSE DESCRIPTION:**

This course provides students with the skills and knowledge to be successful in college. Topics include: diversity; self-management/time management; test taking; memory skills; power reading techniques; critical thinking skills; and managing issues that face many college students.

**PREREQUISITES:** NONE

**COURSE OBJECTIVES:**

After successful completion of this course, the student will be able to:

1. Understand how he/she is responsible for his/her own experience in college;
2. Describe ways to create a successful and satisfying college experience;
3. Describe methods to:
   a. Improve ability to recall information;
   b. Manage time more effectively;
   c. Read a textbook with improved retention;
   d. Take effective notes;
   e. Prepare for and take tests;
   f. Listen to a lecture for comprehension;
   g. Apply creative and critical thinking skills; and,
4. Examine personal ideas and decisions regarding issues typically faced by college students.

**REQUIRED COURSE MATERIALS:**

**Recommended Textbook:** *Becoming a Master Student*, Ellis, D., Houghton Mifflin Company, Latest Edition

**Supplies:**
2 pencils (#2)
3-Ring Binder
Pen

## COURSE OUTLINE

| Topics | Contact Hrs. |
|---|---|
| What Am I Doing Here? Who Are All These People And Where Did They Come From? | 3 |
| First Step | |
| Diversity | |
| I Need a 27-hour Day! Why Is This String Around My Finger? | 3 |
| Time/Self Management | |
| Memory | |
| I Have to Read The Whole Book by Next Week? That Professor Talks All the Time And I Can't Keep Up. | 3 |
| Power Reading | |
| Note Taking | |
| I've Got 4 Tests This Week! Aha! | 3 |
| Skills for Taking Tests | |
| Critical Thinking Skills | |
| **Total Lecture Hours** | **12** |

## COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

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The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES

*A.* ***Resources:*** *Identifies, organizes, plans, and allocates resources*

1. Follows a schedule to complete assigned tasks on time
2. Determines the initial cost of educational expenses and locates appropriate funding sources
3. Monitors and budgets the flow of money and uses strategies for increasing income and decreasing expenses
4. Assesses personal strengths and weaknesses and develops appropriate career goals

*B.* ***Interpersonal:*** *Works with others*

1. Functions as a member of the team in completing assignments
2. Provides feedback to peers as requested
3. Demonstrates good human relation skills and interpersonal interactions
4. Communicates thoughts, feelings and ideas when appropriate; and responsibly challenges existing procedures, policies or authority
5. Resolves conflict
6. Works well with individuals from a variety of ethnic, social or educational backgrounds in completing assigned tasks

C. *Information: Acquires and uses information*
1. Engages in problem solving activities
2. Uses a variety of memory techniques to recall information
3. Uses critical thinking skills in making decisions

D. *Systems: Understands complex inter-relationships*
1. Demonstrates knowledge of organizational structure and follows the chain of command

II. FOUNDATION SKILLS

A. **Basic Skills:** Reads, writes, performs arithmetic and mathematical operations, listens and speaks

*1.* ***Reading:*** *Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*
a. Reads and studies textbook
b. Completes reading assignments
c. Interprets reading assignments as demonstrated in classroom dialogue
d. Interprets and follows class schedule

*2.* ***Writing:*** *Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*
a. Completes written assignments and quizzes
b. Creates an individually designed note-taking system
c. Takes class notes

*3.* ***Arithmetic/Mathematics:*** *Perform basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques*
a. Completes a time-monitor plan

*4.* ***Listening:*** *Receives, attends to, interprets, and responds to verbal messages and other cues*
a. Receives/interprets verbal messages via didactic presentations
b. Responds to verbal messages

c. Confirms verbal message interpretations both in and out of class
d. Makes appropriate behavioral response to verbal messages

5. ***Speaking:*** *Organizes ideas and communicates orally*
   a. Participates in classroom discussions
   b. Organizes ideas and communicates specific questions to the instructor
   c. Orally affirms understanding of a concept, procedure, or required skill
   d. Communicates with peers

**B. Thinking Skills:** Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons

1. ***Creative Thinking:*** *Generates new ideas*
   a. Develops new ideas for approaching problem solving
   b. Participates in the brainstorming sessions
   c. Participates in group problem solving
   d. Practices the team approach to problem solving
2. ***Decision Making:*** *Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*
   a. Generates a personal and career development plan
   b. Assesses areas for personal growth and develops a personal growth plan
   c. Generates a list of career alternatives and chooses the most appropriate career choices based upon a list of personal attributes
   d. Identifies actions required to accomplish personal goals
3. ***Problem Solving:*** *Recognizes problems and devises and implements plan of action*
   a. Learns the steps to problem solving
   b. Participates in group and individual problem solving processes
   c. Makes daily accommodations to stay on schedule
   d. Seeks additional instruction/clarification for assignment completion
   e. Balances social and academic life responsibilities
   f. Accepts responsibility
   g. Demonstrates creative solutions to problems
4. ***Seeing Things In the Mind's Eye:*** *Organizes, and processes symbols, pictures, graphs, objects, and other information*
   a. Participates in activities that encourage accepting responsibility for his/her career success

b. Participates in activities to strengthen belief in self-worth and encourages proactive/responsible choices

5. *Knowing How to Learn: Use efficient learning techniques to acquire and apply new knowledge and skills*
   a. Utilizes techniques for adapting learning styles to differences in teaching styles
   b. Performs assessment of individual learning style
   c. Practices memory techniques
   d. Practices reading improvement techniques
   e. Utilizes techniques for creative thinking
   f. Develops strategies for effective problem solving
6. *Reasoning: Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. Performs self analysis of effective learning styles
   b. Utilizes techniques for effective creative thinking
   c. Develops strategies for effective problem solving

C. **Personal Qualities:** Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty

1. *Responsibility: Exerts a high level of effort and perseveres towards goal attainment*
   a. Utilizes stress management techniques that facilitate goal attainment
   b. Accepts responsibility and develops a proactive attitude, turning individual strengths into academic assets
2. *Self-Esteem: Believes in own self-worth and maintains a positive view of self*
   a. Provides positive feedback/encouragement in groups
   b. Provides individual mentoring/counseling to support the educational process
   c. Develops interpersonal skills that will allow him/her to interact with confidence and project a positive self-image
   d. Practices positive peer feedback during daily exchanges
3. *Sociability: Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. Participates in discussions of cultural diversity and its benefits
   b. Discusses and demonstrates strategies for effective communication across cultures
   c. Participates in discussions of gender diversity and sexism
   d. Participates in discussions of different learning styles and disabilities
   e. Adopts an attitude of tolerance

4. ***Self-Management:*** *Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
   a. Assesses self/personal goals and monitors individual progress
   b. Performs goal setting activities
   c. Conducts self-assessment on quizzes
5. ***Integrity/Honesty:*** *Chooses ethical courses of action*
   a. Meets specific criteria standards to successfully complete the course
   b. Demonstrates honesty and integrity while grading quizzes
   c. Accepts ethical and honest course of action by example
   d. Explores and formulates professional and personal ethical standards

PSYC 1100
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PSYC 2301

# MASTER PROGRAM

## General Psychology

### Course Syllabus

**Total lecture hours: 48** **Total lab hours: 0** **Credit hours: 3**

COURSE DESCRIPTION:

Surveys the major topics in psychology, including an introduction to the study of behavior and the factors that determine and affect behavior.

PREREQUISITES: NONE

COURSE OBJECTIVES:

After successful completion of this course, the students will be able to:

1. Differentiate between the popular image of psychology and the more accurate picture of the nature and content areas of psychology;
2. Recognize the major concepts, vocabulary, theories, research findings and principles of psychology;
3. Demonstrate application of the basic principles of psychological theory to real–life situations;
4. Have an increased understanding of similarities and differences among the people of the world as they relate to psychological principles, concepts, and issues;
5. Integrate overall knowledge of psychology by analyzing, synthesizing, and evaluating own behavior to determine how well he/she is using and will continue to use the information acquired in this course to:
   a. Make a more effective personal-social adjustment to his/her environment;
   b. Develop a more open-minded attitude about human behavior; and,
   c. Become more tolerant of own and others' behavior by understanding some of its determinants.

REQUIRED COURSE MATERIALS:

**Textbooks:** *Exploring Psychology,* New York, New York: Worth Publishers, Latest Edition
*Psychology In Action,* New York, New York: John Wiley and Sons, Latest Edition

**Supplies:** Scantron Answer Sheets

## METHODS OF INSTRUCTION:

**Lecture:** Didactic presentations will include lecture, video and demonstrations.

**Method of Evaluation:** A student's grade will be based on multiple measures of performance. The assessment will measure development of independent critical thinking skills and will include evaluation of the student's ability to:

1. Perform the manipulative skills of the craft as required to satisfactorily complete assignments;
2. Apply theory to assignments;
3. Satisfactorily perform on written, oral, and practical examinations;
4. Satisfactorily perform on outside assignments, including writing assignments, and oral presentations;
5. Contribute to class discussions;
6. Maintain attendance per current policy; and,
7. Follow all rules and safety regulations.

## LECTURE OUTLINE:

| Lecture Topics | Contact Hrs. |
|---|---|
| **Introduction to General Psychology** | 4 |
| Course Orientation | |
| Introduction to Psychology | |
| **Biological Roots of Behavior** | 8 |
| Biological Roots of Behavior | |
| The Developing Person | |
| **Sensation, Perception, and Consciousness** | 8 |
| Sensation and Perception | |
| States of Consciousness | |
| **Learning, Memory, and Intelligence** | 8 |
| Learning | |
| Memory | |
| Thinking and Intelligence | |
| **Motivation, Emotions, Stress and Health** | 8 |
| Motivation | |
| Emotions, Stress, and Health | |
| **Personality and Psychological Disorders** | 8 |
| Personality | |
| Psychological Disorders | |
| **Social Basis of Behavior** | 4 |
| Social Diversity | |
| Course Wrap-Up | |
| **Total Lecture Hours** | **48** |

## COURSE OBJECTIVES: SCANS COMPETENCIES

*The Secretary's Commission on Achieving Necessary Skills (SCANS), U.S. Department of Labor, has identified in its "AMERICA 2000 REPORT" that all students should develop a new set of competencies and foundation skills if they are to enjoy a productive, full and satisfying life. These are in addition to the Technical Workplace Competencies required by industry. SCANS is made up of five competencies and a three-part foundation of skills and personal qualities that are needed for solid job performance. All italicized headings in this section are direct quotations from "What Work Requires of Schools: A SCANS Report for America 2000."*

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The following activities will be performed by each student for successful completion of this course:

I. COMPETENCIES

- *A. Resources: Identifies, organizes, plans, and allocates resources*
  1. Allocates time to complete assigned tasks on schedule
  2. Determines and allocates required materials and resources for meeting objectives
  3. Evaluates skills, performance, and quality of work and provides feedback
- *B. Interpersonal: Works with others*
  1. Participates as a member of the team, contributing to group effort
  2. Provides individual assistance/direction to peers as requested
  3. Determines and meets expectations
  4. Exercises leadership qualities to effectively communicate ideas and make decisions.
  5. Negotiates resources in order to accomplish objectives
  6. Works well with all members of the class
- *C. Information: Acquires and uses information*
  1. Acquires and evaluates information
  2. Organizes and maintains information
  3. Interprets and communicates information
- *D. Systems: Understands complex inter-relationships*
  1. Understands and works well with social, organizational, and technological systems
  2. Monitors and corrects performance of system during operation
  3. Recommends modifications to system to improve performance
- *E. Technology: Works with a variety of technologies*
  1. Chooses relevant procedures, tools, and equipment

2. Applies appropriate procedures and techniques to accomplish tasks
3. Identifies or solves problems to maintain equipment

## II. FOUNDATION SKILLS

A. **Basic Skills:** Reads, writes, performs arithmetic and mathematical operations, listens and speaks

1. ***Reading:*** *Locates, understands, and interprets written information in prose and in documents such as manuals, graphs, and schedules*
   a. Demonstrates basic reading skills including abilities to perceive main ideas, draw appropriate conclusions, detect a sequence, locate answers, find facts, and infer from written texts
   b. Demonstrates course specific reading skills including abilities to read, interpret, and comprehend information from text and supplemental materials on a level to facilitate productive independent and group study
   c. Demonstrates ability to read, interpret, and utilize information from course specific instruments (i.e., charts, diagrams, graphs, schematics, blueprints, flow charts, etc.)
   d. Demonstrates ability to read, interpret, and follow schedules and procedural instructions in a timely and appropriate manner
   e. Demonstrates ability to choose and use most appropriate reading method (skim, scan, or read for comprehension) for materials
2. ***Writing:*** *Communicates thoughts, ideas, information, and messages in writing; and creates documents such as letters, directions, manuals, reports, graphs, and flow charts*
   a. Demonstrates basic writing skills including abilities to produce written documents which conform with accepted grammatical and communication standards required for effective daily functioning
   b. Demonstrates effective written study skills including note taking, maintaining course specific journals, workbooks, manuals, etc.
   c. Demonstrates technical writing skills in preparing outlines, summaries, time lines, flow charts, diagrams, etc. appropriate to materials covered
   d. Demonstrates ability to complete all required writings in a timely, complete, and professional manner

e. Demonstrates competence in subject matter through the organization and presentation of answers to required written assessments

3. ***Arithmetic/Mathematics:*** *Perform basic computations and approaches practical problems by choosing appropriately from a variety of mathematical techniques*
   a. Demonstrates proficiency in basic arithmetic functions including ability to add, subtract, multiply, and divide whole numbers, fractions, decimals, and percentages
   b. Demonstrates ability to read, comprehend, and select appropriate math procedures to work basic math problems
   c. Demonstrates ability to understand and perform multi-step computations
   d. Demonstrates ability to read, interpret, and use standard measuring devices
   e. Demonstrates ability to comprehend, retain, and utilize course specific measuring devices effectively
   f. Demonstrates ability to understand, retain, and utilize higher mathematical formulas and functions required for course specific math performance
   g. Demonstrates ability to appropriately transfer mathematical calculations and information from paper to machines

4. ***Listening:*** *Receives, attends to, interprets, and responds to verbal messages and other cues*
   a. Functions at minimal or above required hearing levels to receive, attend, interpret, and respond to verbal messages and instructions and to safely operate machinery
   b. Demonstrates ability to hear, comprehend, and appropriately follow directions
   c. Demonstrates auditory ability to hear, comprehend, and utilize verbal classroom as well as other auditory instruction
   d. Demonstrates ability to discriminate between essential and non-essential verbal information and react appropriately
   e. Demonstrates ability to focus and fine-tune listening skills to receive, interpret, and respond to various sounds
   f. Demonstrates ability and maturity to seek and receive additional individualized instruction as needed

5. ***Speaking:*** *Organizes ideas and communicates orally*
   a. Demonstrates appropriate listening and speaking skills in personal conversations

b. Demonstrates ability to choose and organize appropriate words to effectively communicate
c. Demonstrates ability to speak clearly and distinctly with appropriate volume, tone, and body language for situation
d. Demonstrates ability to spontaneously organize and present appropriate answers and/or short presentations for classroom and /or assessment purposes
e. Demonstrates ability to formulate, organize, and deliver major presentations to peers or groups
f. Demonstrates ability to speak effectively in one-on-one, small group, or large group presentations
g. Demonstrates ability to take responsibility for presentations

**B. Thinking Skills:** Thinks creatively, makes decisions, solves problems, visualizes, knows how to learn and reasons

*1.* ***Decision Making:*** *Specifies goals and constraints, generates alternatives, considers risks, and evaluates and chooses best alternative*

a. Demonstrates ability to objectively assess personal strengths and weaknesses
b. Demonstrates ability to set realistic short-term and long-term goals
c. Demonstrates ability to recognize and distinguish between positive and negative alternatives
d. Demonstrates ability to identify potential pitfalls and take evasive actions
e. Demonstrates ability to objectively and responsibly evaluate alternatives by testing hypotheses and selecting most appropriate response
f. Demonstrates ability to profit from negative evaluations or mistakes by reformulating, redirecting, reconstructing, or retesting alternatives
g. Demonstrates maturity in taking responsibility for decisions

*2.* ***Problem Solving:*** *Recognizes problems and devises and implements plan of action*

a. Demonstrates ability to detect problem through observation, inquiry, or directive
b. Demonstrates ability to grasp appropriate overview and degree of seriousness of problem and to behave responsibly in situation
c. Demonstrates ability to generate alternatives or options for problem solution

d. Demonstrates ability to research options, assess and evaluate options, and determine appropriate and best solution
e. Demonstrates ability to initiate and effect solution
f. Demonstrates ability to take responsibility for outcomes
g. Demonstrates ability to effectively problem solve in individual, team, or group situations

3. ***Seeing Things In the Mind's Eye:*** *Organizes, and processes symbols, pictures, graphs, objects, and other information*
   a. Functions at minimum or above required visual levels in order to see, interpret, attend and respond to visual imagery and meet safety requirements for necessary machinery
   b. Demonstrates ability to read, interpret, and act upon signs, symbols, and other visual cues
   c. Demonstrates ability to visually discriminate in gross and fine imagery
   d. Demonstrates ability to visualize abstractly
   e. Demonstrates ability to apply visual imagery to applied tasks

4. ***Knowing How to Learn:*** *Use efficient learning techniques to acquire and apply new knowledge and skills*
   a. Demonstrates mastery of basic reading, math, and language skills through application
   b. Demonstrates ability to translate abstract theory into practical application
   c. Demonstrates ability to incorporate and generalize new learning into a sequential learning process
   d. Demonstrates knowledge of good study skills and learning habits

5. ***Reasoning:*** *Discovers a rule or principle underlying the relationship between two or more objects and applies it when solving a problem*
   a. Demonstrates use of simple logic
   b. Demonstrates ability to distinguish relationships
   c. Demonstrates ability to determine and isolate factors in relationships
   d. Demonstrates and applies knowledge through practice
   e. Recognizes that attitudes, skills, and practice are essential to productivity
   f. Demonstrates ability to discriminate between positive and negative, and act accordingly

C. **Personal Qualities:** Displays responsibility, self-esteem, sociability, self-management, and integrity and honesty

1. ***Responsibility:*** *Exerts a high level of effort and perseveres towards goal attainment*
   a. Demonstrates ability to formulate realistic and useful short and long term goals and complete steps necessary to timely achieve goals
   b. Demonstrates ability to make adjustments, revisions, and changes to achieve goals in a cooperative and polite manner
   c. Demonstrates ability to focus on task at hand and work to completion
   d. Demonstrates good work ethics through regular attendance, adequate classroom preparations, and appropriate use of classroom time
   e. Demonstrates maturity to take responsibility for actions
   f. Demonstrates ability to cooperatively work in individual, team, and group situations in timely and effective manner
2. ***Self-Esteem:*** *Believes in own self-worth and maintains a positive view of self*
   a. Presents a positive attitude toward tasks
   b. Demonstrates ability to separate work and personal behaviors
   c. Actively participates in learning opportunities by sharing knowledge and skills with peers and instructors
   d. Demonstrates ability to accept personal strengths and weaknesses and builds on positive behaviors
   e. Demonstrates ability to accept and use constructive criticism
   f. Accepts positive reinforcement in an appropriate manner
3. ***Sociability:*** *Demonstrates understanding, friendliness, adaptability, empathy, and politeness in group settings*
   a. Demonstrates appropriate and acceptable social behaviors in interactions
   b. Demonstrates ability to work cooperatively in individual, team, or group situations
   c. Demonstrates active interest in peers by offering assistance, sharing resources, and sharing knowledge in a professional and acceptable manner
   d. Demonstrates professional work ethic by separating work and personal social behaviors and acting accordingly
4. ***Self-Management:*** *Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control*
   a. Accepts personal strengths and weaknesses and uses the same for positive advancement

b. Demonstrates ability to continuously set, assess, choose, and modify objectives as the situation demands in an appropriate manner
c. Demonstrates ability to formulate and follow personal schedules
d. Demonstrates ability to wisely use classroom time
e. Demonstrates use of good study habits and skills
f. Demonstrates maturity to take responsibility for own actions

5. *Integrity/Honesty: Chooses ethical courses of action*
   a. Knows and demonstrates ability to distinguish between positive and negative behaviors
   b. Demonstrates honesty and integrity in working with peers and supervisors
   c. Takes full responsibility for personal actions
   d. Demonstrates understanding of consequences for negative ethical behaviors and accepts responsibility for same when applicable
   e. Demonstrates positive work and social ethics in undertakings

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