July 2000

Florida Department of Education
CURRICULUM FRAMEWORK

Program Title:	Production Technology
Occupational Area:	Technology Education
Program Numbers:	8604000
CIP Number:	0821011400
Grade Level:	Secondary 9-12, & 30, 31
Standard Length:	3 Credits
Facility Design Code:	243, Related 808, 810, 849, 851, 852
CTSO:	Florida Technology Student Association (FL-TSA)
Certification:	INDUS ARTS @4 @6 I ART-TEC 1 @2

I. **MAJOR CONCEPTS/CONTENT:** The purpose of this program is to provide students with a foundation of knowledge and technically oriented experiences in the study of production technology and its effect upon our lives and the choosing of an occupation. The content and activities will also include the study of entrepreneurship, safety, and leadership skills. This program focuses on transferable skills and stresses understanding and demonstration of the technological tolls, machines, instruments, materials, processes and systems in business and industry.

Listed below are the courses that make up this program.

8600540 - Production Technology I
8600640 - Production Technology II
8601740 - Production Technology III

II. **LABORATORY ACTIVITIES:** Instruction and learning activities are provided in a laboratory setting using hands-on experiences with technology equipment, tools and materials appropriate to the course content.

III. **SPECIAL NOTE:** The Florida Technology Student Association (FL-TSA) is the appropriate Career and Technical Student Organization for providing leadership training experiences and reinforcing specific vocational skills. Career and Technical Student Organizations, shall be an integral part of the vocational instructional program, and the activities of such organizations are defined as part of the curriculum in accordance with Rule 6A-6.065, FAC. FL-TSA information can be obtained from the web site at <http://www.florida-tsa.net>.

Advanced Applications in Technology (AAiT) - course number 8601900 is appropriate to be used for content area continuation in this program after all three credits of this program have been completed. The purpose of this course is to provide students with the opportunity to develop a school based project from "vision" to "reality". Working in teams to design, engineer, manufacture, construct, test, redesign, test again; and then produce a finished "project". This would involve using ALL the knowledge previously learned, not only in Technology Education but also across the curriculum. See the (AAiT) framework for more information.

Work-Based Experience (WBE) - course number 8601800 is the appropriate course to provide Technology Education students with the opportunity, as Student Learners, to gain real world

practical, first-hand exposure in broad occupational clusters or industry sectors through a structured, compensated or uncompensated experience. Work-Based Experience is also designed to give the Student Learners an opportunity to apply and integrate the knowledge, skills, and abilities acquired during their School-Based Experience to actual work situations independent of school facilities. At least one credit of a Technology Education program consisting of three credits must be completed before enrolling in WBE. See the (WBE) framework for more information.

The Intermediate and Advance courses in this program may articulate into postsecondary Tech-Prep 2 + 2 programs when taken in sequence. Tech-Prep 2 + 2 programs require articulation agreements between secondary and postsecondary educational agencies.

IV. **INTENDED OUTCOMES:** After successfully completing this program, the student will be able to:

01.0 Demonstrate the ability to work safely with a variety of technologies.
02.0 Demonstrate interpersonal skills as they relate to the workplace.
03.0 Identify and apply methods of information acquisition and utilization.
04.0 Apply basic skills in communications, mathematics, and science appropriate to technological content and learning activities.
05.0 Demonstrate and apply design/problem-solving processes.
06.0 Express an understanding of technological systems and their complex interrelationships.
07.0 Demonstrate the ability to properly identify, organize, plan, and allocate resources.
08.0 Discuss individual interests and aptitudes as they relate to a career.
09.0 Demonstrate employability skills.
10.0 Demonstrate an understanding of entrepreneurship.
11.0 Make an informed and meaningful career choice.
12.0 Identify kinds and levels of work common to production technology.
13.0 List requisites and career opportunities for employment in production technology.
14.0 Describe the processes related to industrial materials and composites.
15.0 Perform processing skills as it relates to industrial materials and composites.
16.0 Produce a custom product from industrial materials and composites using preprocessing, processing, and postprocessing production technology skills.
17.0 Plan and participate in a mass production system for manufacturing a product.
18.0 Perform the technological processes of separating and forming materials.
19.0 Utilize modern production technology in the processes of separating, forming, combining, fabrication and finishing of materials (CAM, CNC, Robotics, Work Cells).
20.0 Conduct a research and experimentation project on a production technology system.
21.0 Demonstrate technological knowledge and skills in the designing and engineering of constructed works.

22.0 Demonstrate technical knowledge and skills in the contracting, estimating, bidding, and scheduling procedures processes.
23.0 Demonstrate technical knowledge and skill in the construction of superstructures.
24.0 Demonstrate technical knowledge and skills in the installation of utilities.
25.0 Demonstrate technical knowledge and skills in the processes of enclosing superstructures.
26.0 Demonstrate technical knowledge and skills in the process of finishing the interior and exterior of a constructed structure.
27.0 Conduct a research and experimentation project on a production technology system.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Number: 8600540
Course Title: Production Technology I
Course Credit: 1

COURSE DESCRIPTION: This course provides students with an introduction to the knowledge, human relations, and technological skills found today in technical professions.

01.0 DEMONSTRATE THE ABILITY TO WORK SAFELY WITH A VARIETY OF TECHNOLOGIES--The student will be able to:

- 01.01 Select appropriate tools, procedures, and/or equipment needed to produce a product.
- 01.02 Demonstrate the safe usage of appropriate tools, procedures, and operation of equipment needed to produce a product.
- 01.03 Demonstrate knowledge required to maintain and troubleshoot equipment used in a variety of technological systems.
- 01.04 Follow laboratory safety rules and procedures.
- 01.05 Demonstrate good housekeeping at work station within total laboratory.
- 01.06 Identify color-coding safety standards.
- 01.07 Explain fire prevention and safety precautions and practices for extinguishing fires.
- 01.08 Identify harmful effects/potential dangers of familiar hazardous substances/devices to people and the environment.

02.0 DEMONSTRATE INTERPERSONAL SKILLS AS THEY RELATE TO THE WORKPLACE--The student will be able to:

- 02.01 Perform roles in a student personnel system or in the Florida Technology Student Association (FL-TSA).
- 02.02 Participate as a member of a team.
- 02.03 Teach others new skills.
- 02.04 Identify skills needed to serve clients/customers.
- 02.05 Demonstrate leadership skills.
- 02.06 Describe strategies necessary for negotiating agreements.
- 02.07 Demonstrate the application of skills necessary to work with people of diverse backgrounds.
- 02.08 Form an understanding and appreciation for work after listening to or observing technology workers.
- 02.09 Form an understanding and appreciation for work after participating in a simulated technology group project in the laboratory.
- 02.10 Form an understanding and appreciation for the roles and work of co-workers.

03.0 IDENTIFY AND APPLY METHODS OF INFORMATION ACQUISITION AND UTILIZATIONS--The student will be able to:

- 03.01 Define terms related to computers.
- 03.02 Identify and describe methods of information acquisition and evaluation.

03.03 Discuss advantages and disadvantages in the application of technologies.
03.04 Produce a plan to organize and maintain information relevant to emerging technologies.
03.05 Comprehend and communicate information relevant to emerging technologies.
03.06 Demonstrate the use of computers to process information.

04.0 APPLY BASIC SKILLS IN COMMUNICATIONS, MATHEMATICS, AND SCIENCE APPROPRIATE TO TECHNOLOGICAL CONTENT AND LEARNING ACTIVITIES--The student will be able to:

04.01 Identify and explain the main and subordinate ideas in a written work.
04.02 Distinguish different purposes and methods of writing, identify a writer's point of view and tone, and interpret a writer's meaning.
04.03 Define unfamiliar words by use of structural analysis, decoding, contextual clues, or by using a dictionary.
04.04 Distinguish fact from opinion.
04.05 Read critically by asking pertinent questions, by recognizing assumptions and implications, and by evaluating ideas.
04.06 Select, relate, and organize, ideas using outlining and/or graphic organizers and develop the ideas in coherent paragraphs.
04.07 Improve one's own writing by restructuring, correcting errors, and rewriting.
04.08 Gather and organize information from primary and secondary sources; write a report using this research; quote, paraphrase, and summarize accurately; and cite sources properly.
04.09 Vary one's writing style, including vocabulary and sentence structure, for different readers and purposes.
04.10 Write logical and understandable statements, or phrases, to accurately fill out commonly used forms.
04.11 Compose unified and coherent correspondence, directions, descriptions, explanations and reports.
04.12 Participate critically and constructively in the exchange of ideas, particularly during class discussions and conferences with instructors.
04.13 Conceive and develop ideas about a topic for the purpose of speaking to a group; choose and organize related ideas; present them clearly in Standard English; and evaluate similar presentations by others.
04.14 Use the mathematics of:
- integers, fractions, and decimals;
- ratios, proportions, and percentages;
- roots and powers;
- algebra;
- geometry.
04.15 Make estimates and approximations, and judge the reasonableness of a result.
04.16 Use elementary concepts of probability and statistics.
04.17 Draw, read, and analyze graphs, charts, and tables.
04.18 Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solutions of such questions through familiarity with laboratory and field work.
04.19 Organize and communicate the results obtained by observation and experimentation.

04.20 Apply the basic principles of biology, physics, and chemistry (properties of matter; structure of compounds; concepts of motion; temperature, pressure and volume; work, power, force and energy; machines; human cell structure).
04.21 Identify problems rooted in basic biology, physics, or chemistry (effects of hazardous materials on health and safety, effects of drugs on health, trouble shooting problems on a machine).

05.0 DEMONSTRATE AND APPLY DESIGN/PROBLEM-SOLVING PROCESSES--The student will be able to:

05.01 Describe and explain steps in the design/problem-solving process.
05.02 Propose solutions to given problems.
05.03 Design and implement the optimal solution to a given problem.
05.04 Document each step of the design/problem-solving process.
05.05 Demonstrate "brainstorming" as a process to solve problems.
05.06 Define "critical thinking" and its value in the problem-solving process.

06.0 EXPRESS AN UNDERSTANDING OF TECHNOLOGICAL SYSTEMS AND THEIR COMPLEX INTERRELATIONSHIPS--The student will be able to:

06.01 Demonstrate a knowledge of how social, organizational, and technological systems work.
06.02 Explore methods used to monitor and correct performance of technological systems.
06.03 Design and implement an optimal solution to a given problem.
06.04 Outline major historical technological developments or events.
06.05 Identify recent advances in technology.
06.06 Explain problem-solving roles of technology.
06.07 Forecast a technological development or event.
06.08 Define technology.

07.0 DEMONSTRATE THE ABILITY TO PROPERLY IDENTIFY, ORGANIZE, PLAN, AND ALLOCATE RESOURCES--The student will be able to:

07.01 Demonstrate the ability to select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
07.02 Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.
07.03 Demonstrate the ability to acquire, store, allocate, and use materials or space efficiently.
07.04 Display a knowledge of the efficient use of human resources.

08.0 DISCUSS INDIVIDUAL INTERESTS AND APTITUDES AS THEY RELATE TO A CAREER--The student will be able to:

08.01 Describe individual strengths and weaknesses.
08.02 Discuss individual interests related to a career.
08.03 Identify careers within specific areas of technology.
08.04 Explore careers within specific areas of interest.

09.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:

09.01 Conduct a job search.
09.02 Secure information about a career.
09.03 Identify documents which may be required when applying for a job interview.
09.04 Complete a job application form correctly.
09.05 Demonstrate competence in job interview techniques.
09.06 Prepare a resume for a job.

10.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:

10.01 Define entrepreneurship.
10.02 Describe the importance of entrepreneurship to the American economy.
10.03 List the advantages and disadvantages of business ownership.
10.04 Identify the risks involved in ownership of a business.
10.05 Identify the necessary personal characteristics of a successful entrepreneur.
10.06 Identify the business skills needed to operate a small business efficiently and effectively.

11.0 MAKE AN INFORMED AND MEANINGFUL CAREER CHOICE--The student will be able to:

11.01 Make a tentative occupational choice based on the information learned and interest developed in this course.
11.02 Review tentative occupational choices based on the information learned and interest developed in this course.

12.0 IDENTIFY KINDS AND LEVELS OF WORK COMMON TO PRODUCTION TECHNOLOGY--The student will be able to:

12.01 Identify kinds of work related to materials and processes technologies.
12.02 Identify kinds of work related to manufacturing technologies.
12.03 Identify kinds of work related to construction technologies.
12.04 Identify semiskilled, skilled and professional levels of work in materials and processes technologies.
12.05 Identify semiskilled, skilled, and professional levels of work in manufacturing technologies.
12.06 Identify semiskilled, skilled, and professional levels of work in construction technologies.

13.0 LIST REQUISITES AND CAREER OPPORTUNITIES FOR EMPLOYMENT IN PRODUCTION TECHNOLOGY--The student will be able to:

13.01 List occupations, job requirements, and employment opportunities in materials and processes, manufacturing construction technology.
13.02 List occupational training programs and academic programs and the postsecondary levels in production technology.

14.0 DESCRIBE THE PROCESSES RELATED TO INDUSTRIAL MATERIALS AND COMPOSITES--The student will be able to:

14.01 Describe preprocessing functions.
14.02 Describe processing functions.
14.03 Describe postprocessing functions.

15.0 PERFORM PREPROCESSING SKILLS AS IT RELATES TO INDUSTRIAL MATERIALS AND COMPOSITES--The student will be able to:

15.01 Design a product.
15.02 Prepare a product materials list.
15.03 Prepare a product production procedure list.
15.04 Locate and order products and materials.
15.05 Store and protect product materials properly.

16.0 PRODUCE A CUSTOM PRODUCT FROM INDUSTRIAL MATERIALS AND COMPOSITES USING PREPROCESSING, PROCESSING, AND POSTPROCESSING PRODUCTION TECHNOLOGY SKILLS--The student will be able to:

16.01 Apply the technology processes of separating and forming materials.
16.02 Apply the technology processes of conditioning materials.
16.03 Apply the technology processes of combining in the fabrication and finishing of materials.
16.04 Apply modern production technology practices and equipment in the processes of separating, forming, conditioning, fabricating and finishing of materials (CNC, CAD, CAM, Robotics, etc.).
16.05 Assemble a product.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Number: 8600640
Course Title: Production Technology II
Course Credit: 1

COURSE DESCRIPTION: This program provides students with an introduction to the knowledge, human relations, and technological skills found today in technical professions.

01.0 DEMONSTRATE THE ABILITY TO WORK SAFELY WITH A VARIETY OF TECHNOLOGIES--The student will be able to:

- 01.01 Select appropriate tools, procedures, and/or equipment needed to produce a product.
- 01.02 Demonstrate the safe usage of appropriate tools, procedures, and operation of equipment needed to produce a product.
- 01.03 Demonstrate knowledge required to maintain and troubleshoot equipment used in a variety of technological systems.
- 01.04 Follow laboratory safety rules and procedures.
- 01.05 Demonstrate good housekeeping at work station within total laboratory.
- 01.06 Identify color-coding safety standards.
- 01.07 Explain fire prevention and safety precautions and practices for extinguishing fires.
- 01.08 Identify harmful effects/potential dangers of familiar hazardous substances/devices to people and the environment.

02.0 DEMONSTRATE INTERPERSONAL SKILLS AS THEY RELATE TO THE WORKPLACE--The student will be able to:

- 02.01 Perform roles in a student personnel system or in the Florida Technology Student Association (FL-TSA).
- 02.02 Participate as a member of a team.
- 02.03 Teach others new skills.
- 02.04 Identify skills needed to serve clients/customers.
- 02.05 Demonstrate leadership skills.
- 02.06 Describe strategies necessary for negotiating agreements.
- 02.07 Demonstrate the application of skills necessary to work with people of diverse backgrounds.
- 02.08 Form an understanding and appreciation for work after listening to or observing technology workers.
- 02.09 Form an understanding and appreciation for work after participating in a simulated technology group project in the laboratory.
- 02.10 Form an understanding and appreciation for the roles and work of co-workers.

03.0 IDENTIFY AND APPLY METHODS OF INFORMATION ACQUISITION AND UTILIZATIONS--The student will be able to:

- 03.01 Define terms related to computers.
- 03.02 Identify and describe methods of information acquisition and evaluation.

03.03 Discuss advantages and disadvantages in the application of technologies.
03.04 Produce a plan to organize and maintain information relevant to emerging technologies.
03.05 Comprehend and communicate information relevant to emerging technologies.
03.06 Demonstrate the use of computers to process information.

04.0 APPLY BASIC SKILLS IN COMMUNICATIONS, MATHEMATICS, AND SCIENCE APPROPRIATE TO TECHNOLOGICAL CONTENT AND LEARNING ACTIVITIES--The student will be able to:

04.01 Identify and explain the main and subordinate ideas in a written work.
04.02 Distinguish different purposes and methods of writing, identify a writer's point of view and tone, and interpret a writer's meaning.
04.03 Define unfamiliar words by use of structural analysis, decoding, contextual clues, or by using a dictionary.
04.04 Distinguish fact from opinion.
04.05 Read critically by asking pertinent questions, by recognizing assumptions and implications, and by evaluating ideas.
04.06 Select, relate, and organize, ideas using outlining and/or graphic organizers and develop the ideas in coherent paragraphs.
04.07 Improve one's own writing by restructuring, correcting errors, and rewriting.
04.08 Gather and organize information from primary and secondary sources; write a report using this research; quote, paraphrase, and summarize accurately; and cite sources properly.
04.09 Vary one's writing style, including vocabulary and sentence structure, for different readers and purposes.
04.10 Write logical and understandable statements, or phrases, to accurately fill out commonly used forms.
04.11 Compose unified and coherent correspondence, directions, descriptions, explanations and reports.
04.12 Participate critically and constructively in the exchange of ideas, particularly during class discussions and conferences with instructors.
04.13 Conceive and develop ideas about a topic for the purpose of speaking to a group; choose and organize related ideas; present them clearly in Standard English; and evaluate similar presentations by others.
04.14 Use the mathematics of:
- integers, fractions, and decimals;
- ratios, proportions, and percentages;
- roots and powers;
- algebra;
- geometry.
04.15 Make estimates and approximations, and judge the reasonableness of a result.
04.16 Use elementary concepts of probability and statistics.
04.17 Draw, read, and analyze graphs, charts, and tables.
04.18 Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solutions of such questions through familiarity with laboratory and field work.
04.19 Organize and communicate the results obtained by observation and experimentation.

04.20 Apply the basic principles of biology, physics, and chemistry (properties of matter; structure of compounds; concepts of motion; temperature, pressure and volume; work, power, force and energy; machines; human cell structure).
04.21 Identify problems rooted in basic biology, physics, or chemistry (effects of hazardous materials on health and safety, effects of drugs on health, trouble shooting problems on a machine).

05.0 DEMONSTRATE AND APPLY DESIGN/PROBLEM-SOLVING PROCESSES--The student will be able to:

05.01 Describe and explain steps in the design/problem-solving process.
05.02 Propose solutions to given problems.
05.03 Design and implement the optimal solution to a given problem.
05.04 Document each step of the design/problem-solving process.
05.05 Demonstrate "brainstorming" as a process to solve problems.
05.06 Define "critical thinking" and its value in the problem-solving process.

06.0 EXPRESS AN UNDERSTANDING OF TECHNOLOGICAL SYSTEMS AND THEIR COMPLEX INTERRELATIONSHIPS--The student will be able to:

06.01 Demonstrate a knowledge of how social, organizational, and technological systems work.
06.02 Explore methods used to monitor and correct performance of technological systems.
06.03 Design and implement an optimal solution to a given problem.
06.04 Outline major historical technological developments or events.
06.05 Identify recent advances in technology.
06.06 Explain problem-solving roles of technology.
06.07 Forecast a technological development or event.
06.08 Define technology.

07.0 DEMONSTRATE THE ABILITY TO PROPERLY IDENTIFY, ORGANIZE, PLAN, AND ALLOCATE RESOURCES--The student will be able to:

07.01 Demonstrate the ability to select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
07.02 Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.
07.03 Demonstrate the ability to acquire, store, allocate, and use materials or space efficiently.
07.04 Display a knowledge of the efficient use of human resources.

08.0 DISCUSS INDIVIDUAL INTERESTS AND APTITUDES AS THEY RELATE TO A CAREER--The student will be able to:

08.01 Describe individual strengths and weaknesses.
08.02 Discuss individual interests related to a career.
08.03 Identify careers within specific areas of technology.
08.04 Explore careers within specific areas of interest.

09.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:

09.01 Conduct a job search.
09.02 Secure information about a career.
09.03 Identify documents which may be required when applying for a job interview.
09.04 Complete a job application form correctly.
09.05 Demonstrate competence in job interview techniques.
09.06 Prepare a resume for a job.

10.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:

10.01 Define entrepreneurship.
10.02 Describe the importance of entrepreneurship to the American economy.
10.03 List the advantages and disadvantages of business ownership.
10.04 Identify the risks involved in ownership of a business.
10.05 Identify the necessary personal characteristics of a successful entrepreneur.
10.06 Identify the business skills needed to operate a small business efficiently and effectively.

11.0 MAKE AN INFORMED AND MEANINGFUL CAREER CHOICE--The student will be able to:

11.01 Make a tentative occupational choice based on the information learned and interest developed in this course.
11.02 Review tentative occupational choices based on the information learned and interest developed in this course.

17.0 PLAN AND PARTICIPATE IN A MASS PRODUCTION SYSTEM FOR MANUFACTURING A PRODUCT--The student will be able to:

17.01 Design jigs, fixtures, or a model system for product mass production.
17.02 Develop workable jigs, fixtures and/or a model system for product mass production.
17.03 Participate in the organized mass production of a product.
17.04 Demonstrate design/problem-solving processes.

18.0 PERFORM THE TECHNOLOGICAL PROCESSES OF SEPARATING AND FORMING MATERIALS--The student will be able to:

18.01 Perform materials-forming practices such as casting or molding, and compressing or stretching.
18.02 Perform materials separating practices such as shearing, chip removing, and other separating processes.
18.03 Demonstrate design/problem-solving processes.

19.0 UTILIZE MODERN PRODUCTION TECHNOLOGY IN THE PROCESSES OF SEPARATING, FORMING, COMBINING, FABRICATION, AND FINISHING OF MATERIALS (CAM, CNC, Robotics, Work Cells)--The student will be able to:

19.01 Design a program to be used in the separating forming and finishing of materials.

19.02 Develop and perform an operational program of forming materials.
19.03 Develop and perform an operational program of finishing materials.
19.04 Develop and perform an operational program that will use combination of production processes and materials.
19.05 Demonstrate design/problem-solving processes.

20.0 CONDUCT A RESEARCH AND EXPERIMENTATION PROJECT ON A PRODUCTION TECHNOLOGY SYSTEM--The student will be able to:

20.01 Identify a problem.
20.02 State a need to research the problem.
20.03 Form a hypothesis about the problem.
20.04 Plan the procedures for researching the problem.
20.05 Conduct the research following the planned procedures.
20.06 Present the research findings in a seminar.
20.07 State conclusions based on the research findings.

Florida Department of Education
STUDENT PERFORMANCE STANDARDS

Course Number: 8601740
Course Title: Production Technology III
Course Credit: 1

COURSE DESCRIPTION: This program provides students with an introduction to the knowledge, human relations, and technological skills found today in technical profession.

01.0 DEMONSTRATE THE ABILITY TO WORK SAFELY WITH A VARIETY OF TECHNOLOGIES--The student will be able to:

- 01.01 Select appropriate tools, procedures, and/or equipment needed to produce a product.
- 01.02 Demonstrate the safe usage of appropriate tools, procedures, and operation of equipment needed to produce a product.
- 01.03 Demonstrate knowledge required to maintain and troubleshoot equipment used in a variety of technological systems.
- 01.04 Follow laboratory safety rules and procedures.
- 01.05 Demonstrate good housekeeping at work station within total laboratory.
- 01.06 Identify color-coding safety standards.
- 01.07 Explain fire prevention and safety precautions and practices for extinguishing fires.
- 01.08 Identify harmful effects/potential dangers of familiar hazardous substances/devices to people and the environment.

02.0 DEMONSTRATE INTERPERSONAL SKILLS AS THEY RELATE TO THE WORKPLACE--The student will be able to:

- 02.01 Perform roles in a student personnel system or in the Florida Technology Student Association (FL-TSA).
- 02.02 Participate as a member of a team.
- 02.03 Teach others new skills.
- 02.04 Identify skills needed to serve clients/customers.
- 02.05 Demonstrate leadership skills.
- 02.06 Describe strategies necessary for negotiating agreements.
- 02.07 Demonstrate the application of skills necessary to work with people of diverse backgrounds.
- 02.08 Form an understanding and appreciation for work after listening to or observing technology workers.
- 02.09 Form an understanding and appreciation for work after participating in a simulated technology group project in the laboratory.
- 02.10 Form an understanding and appreciation for the roles and work of co-workers.

03.0 IDENTIFY AND APPLY METHODS OF INFORMATION ACQUISITION AND UTILIZATIONS--The student will be able to:

- 03.01 Define terms related to computers.
- 03.02 Identify and describe methods of information acquisition and evaluation.

03.03 Discuss advantages and disadvantages in the application of technologies.
03.04 Produce a plan to organize and maintain information relevant to emerging technologies.
03.05 Comprehend and communicate information relevant to emerging technologies.
03.06 Demonstrate the use of computers to process information.

04.0 APPLY BASIC SKILLS IN COMMUNICATIONS, MATHEMATICS, AND SCIENCE APPROPRIATE TO TECHNOLOGICAL CONTENT AND LEARNING ACTIVITIES--The student will be able to:

04.01 Identify and explain the main and subordinate ideas in a written work.
04.02 Distinguish different purposes and methods of writing, identify a writer's point of view and tone, and interpret a writer's meaning.
04.03 Define unfamiliar words by use of structural analysis, decoding, contextual clues, or by using a dictionary.
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04.07 Improve one's own writing by restructuring, correcting errors, and rewriting.
04.08 Gather and organize information from primary and secondary sources; write a report using this research; quote, paraphrase, and summarize accurately; and cite sources properly.
04.09 Vary one's writing style, including vocabulary and sentence structure, for different readers and purposes.
04.10 Write logical and understandable statements, or phrases, to accurately fill out commonly used forms.
04.11 Compose unified and coherent correspondence, directions, descriptions, explanations and reports.
04.12 Participate critically and constructively in the exchange of ideas, particularly during class discussions and conferences with instructors.
04.13 Conceive and develop ideas about a topic for the purpose of speaking to a group; choose and organize related ideas; present them clearly in Standard English; and evaluate similar presentations by others.
04.14 Use the mathematics of:
- integers, fractions, and decimals;
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04.15 Make estimates and approximations, and judge the reasonableness of a result.
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04.17 Draw, read, and analyze graphs, charts, and tables.
04.18 Ask appropriate scientific questions and recognize what is involved in experimental approaches to the solutions of such questions through familiarity with laboratory and field work.
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04.21 Identify problems rooted in basic biology, physics, or chemistry (effects of hazardous materials on health and safety, effects of drugs on health, trouble shooting problems on a machine).

05.0 DEMONSTRATE AND APPLY DESIGN/PROBLEM-SOLVING PROCESSES--The student will be able to:

05.01 Describe and explain steps in the design/problem-solving process.
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06.0 EXPRESS AN UNDERSTANDING OF TECHNOLOGICAL SYSTEMS AND THEIR COMPLEX INTERRELATIONSHIPS--The student will be able to:

06.01 Demonstrate a knowledge of how social, organizational, and technological systems work.
06.02 Explore methods used to monitor and correct performance of technological systems.
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07.0 DEMONSTRATE THE ABILITY TO PROPERLY IDENTIFY, ORGANIZE, PLAN, AND ALLOCATE RESOURCES--The student will be able to:

07.01 Demonstrate the ability to select goal-relevant activities, rank them, allocate time, and prepare and follow schedules.
07.02 Use or prepare budgets, make forecasts, keep records, and make adjustments to meet objectives.
07.03 Demonstrate the ability to acquire, store, allocate, and use materials or space efficiently.
07.04 Display a knowledge of the efficient use of human resources.

08.0 DISCUSS INDIVIDUAL INTERESTS AND APTITUDES AS THEY RELATE TO A CAREER--The student will be able to:

08.01 Describe individual strengths and weaknesses.
08.02 Discuss individual interests related to a career.
08.03 Identify careers within specific areas of technology.
08.04 Explore careers within specific areas of interest.

09.0 DEMONSTRATE EMPLOYABILITY SKILLS--The student will be able to:

09.01 Conduct a job search.
09.02 Secure information about a career.
09.03 Identify documents which may be required when applying for a job interview.
09.04 Complete a job application form correctly.
09.05 Demonstrate competence in job interview techniques.
09.06 Prepare a resume for a job.

10.0 DEMONSTRATE AN UNDERSTANDING OF ENTREPRENEURSHIP--The student will be able to:

10.01 Define entrepreneurship.
10.02 Describe the importance of entrepreneurship to the American economy.
10.03 List the advantages and disadvantages of business ownership.
10.04 Identify the risks involved in ownership of a business.
10.05 Identify the necessary personal characteristics of a successful entrepreneur.
10.06 Identify the business skills needed to operate a small business efficiently and effectively.

11.0 MAKE AN INFORMED AND MEANINGFUL CAREER CHOICE--The student will be able to:

11.01 Make a tentative occupational choice based on the information learned and interest developed in this course.
11.02 Review tentative occupational choices based on the information learned and interest developed in this course.

21.0 DEMONSTRATE TECHNOLOGICAL KNOWLEDGE AND SKILLS IN THE DESIGNING AND ENGINEERING OF CONSTRUCTED WORKS--The student will be able to:

21.01 Read and interpret architectural drawings, blueprints, symbols, and construction plans.
21.02 Describe building codes, permits, and inspection requirements.
21.03 Sketch and draw a plan for a construction project.
21.04 Display knowledge about regional planning and the construction of civil and community projects (roads, parks, dams, airports, seaports, warehouses, shopping centers, factories, skyscrapers, etc.).
21.05 Develop a scale model of a civil or community structure and give a report on the need.

22.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS IN THE CONTRACTING, ESTIMATING, BIDDING, AND SCHEDULING PROCEDURES PROCESSES--The student will be able to:

22.01 Estimate construction costs using various methods including a computer.
22.02 Read and prepare bid invitations for contractors to build a construction project.
22.03 Establish criteria for awarding a construction contract.
22.04 Describe the content of a construction contract and performance bond.

23.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS IN THE CONSTRUCTION OF SUPERSTRUCTURES--The student will be able to:

23.01 Describe mass, solid wall, frame, and air-supported superstructures.
23.02 Describe the materials used in the construction of superstructures.
23.03 Use technical carpentry skills, tools, and materials in constructing a wood frame superstructure.
23.04 Describe factory manufacturing of superstructures and modules.

24.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS IN THE INSTALLATION OF UTILITIES--The student will be able to:

24.01 Describe public utility systems for supplying water, electricity, natural gas, and sewerage.
24.02 Describe the functions and operation of heating, cooling, and ventilating systems.
24.03 Demonstration a technical knowledge of plumbing and electrical systems in homes or buildings.
24.04 Use the technical tools and skills to install plumbing and electrical systems in homes of buildings.
24.05 Diagnose and troubleshoot problems with utility systems.

25.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS IN THE PROCESS OF ENCLOSING SUPERSTRUCTURES--The student will be able to:

25.01 Describe the different types of materials and methods for constructing interior and exterior walls.
25.02 Describe the different types of materials and methods for laying floors and building roofs.
25.03 Describe the different types of methods of constructing or installing windows and doors.
25.04 Describe the purposes, materials, and methods of insulating enclosed superstructures.

26.0 DEMONSTRATE TECHNICAL KNOWLEDGE AND SKILLS IN THE PROCESS OF FINISHING THE INTERIOR AND EXTERIOR OF A CONSTRUCTED STRUCTURE--The student will be able to:

26.01 Describe the different types of materials and methods for trimming, painting, and decorating a constructed structure.
26.02 Describe the types of accessories and fixtures that are installed to finish completed construction.
26.03 Describe the materials and methods used for the finishing processes of paving and landscaping.

27.0 CONDUCT A RESEARCH AND EXPERIMENTATION PROJECT ON A PRODUCTION TECHNOLOGY SYSTEM--The student will be able to:

27.01 Identify a problem.
27.02 State a need to research the problem.
27.03 Form a hypothesis about the problem.
27.04 Plan the procedures for researching the problem.
27.05 Conduct the research following the planned procedures.
27.06 Present the research findings in a seminar.