
MONTANA STANDARDS AND GUIDELINES



for Career and
Vocational/Technical
Education

Updated Summer 2002

TABLE OF CONTENTS

Preface.....	i
Career and Vocational/Technical Education Personnel Directory.....	ii
Part I: Definitions and Philosophy	
A. Career and Vocational/Technical Education: Federal and State Definitions.....	1
B. Career and Vocational/Technical Education in Montana.....	1
C. Career and Vocational/Technical Education Philosophy.....	2
Part II: General Requirements of Secondary Career and Vocational/Technical Education Programs	
A. General Requirements.....	3
B. Secondary Career and Vocational/Technical Education Forms Due Dates Calendar.....	5
C. Annual State Secondary Career and Vocational/Technical Education Application Procedures.....	6
D. Secondary Career and Vocational/Technical Program Evaluation.....	6
E. Secondary Career and Vocational/Technical Student Follow-Up Information.....	7
F. Standards for Local Career and Vocational/Technical Advisory Committees.....	8
Secondary Agricultural Education Programs.....	9
Secondary Business/Technology and Marketing Education Programs.....	15
Secondary Family and Consumer Sciences Education Programs.....	19
Secondary Industrial/Technology Education Programs.....	25
Secondary Trade and Industrial Education Programs.....	29
Appendix A: Local Career and Vocational/Technical Advisory Committees.....	35
Appendix B: Relevant Web Sites.....	37

PREFACE

These Standards and Guidelines for Secondary Career and Vocational/Technical Education in Montana are published to serve as a supplement to the state plan and are designed to provide assistance to local administrators and others involved in planning and conducting secondary career and vocational/technical programs under state and federal laws. All secondary programs receiving state funding must meet the minimum standards addressed in this document.

These standards and guidelines have evolved over the years and reflect the consideration of recommendations from many stakeholders and agencies at all levels of career and vocational/technical education in Montana. Regional and national standards, as well as practices in other states, have been reviewed in the quest to design this working document for Montana's programs.

The requirements portion of these guidelines became effective May 18, 1984 (revised 1992, 2002). These guidelines will be reviewed and revised as necessary to meet emerging needs and to reflect changes in legislation and the Administrative Rules of Montana (ARM).

The Montana State Plan for Career and Vocational/Technical Education is an agreement between the U.S. Department of Education, the State Board for Career and Vocational/Technical Education, known as the Board of Regents as the eligible agent for the federal career and vocational/technical monies, and the Montana superintendent of public instruction. It contains planning information and data relating to the operation of the various aspects of federally funded career and vocational/technical education programs at both the secondary and postsecondary levels in Montana.

**CAREER AND VOCATIONAL/TECHNICAL EDUCATION
PERSONNEL DIRECTORY
Office of Public Instruction**

Superintendent of Public Instruction

(Governing Agent and Executive Officer for K-12 Career and Vocational/Technical Education)
Elsie Arntzen (406) 444-3680

Department of Education Services

Assistant Superintendent
Timothy Tharp (406) 444-4434

Division of Career and Vocational/Technical Education

State Director for K-12 Career and Vocational/Technical Education
TJ Eyer (406) 444-9019

Specialists

	Agriculture Education Specialist FFA State Advisor	(406) 444-4451
Eric Swenson	Business and Marketing Education Specialist Business Professionals of America (BPA) State Advisor DECA – An Association of Marketing Students State Advisor	(406) 444-7991
Megan Vincent	Family and Consumer Sciences Education Specialist Family, Career and Community Leaders of America (FCCLA) State Advisor	(406) 444-2059
Don Michalsky	Industrial Technology Education Specialist Trades and Industry Education Specialist Skills-USA VICA State Advisor Technology Student Association (TSA) State Representative	(406) 444-4452

PART I: DEFINITIONS AND PHILOSOPHY

A. CAREER AND VOCATIONAL/TECHNICAL EDUCATION: FEDERAL AND STATE DEFINITIONS

Federal Definition:

Section 3. Definitions

Vocational and Technical Education. – The term “vocational and technical education” means organized educational activities that-

- A. Offer a sequence of courses that provides individuals with the academic and technical knowledge and skills the individuals need to prepare for further education and for careers (other than careers requiring a baccalaureate, master’s, or doctoral degree) in current or emerging employment sectors; and
- B. Include competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, of an individual.

State Definition:

Career and Vocational/Technical Education defines programs of articulated sequential experiences that prepare students for successful participation in community, family, postsecondary education and careers.

Career and Vocational/Technical Education programs include Agriculture, Business and Marketing, Family and Consumer Sciences, Health Occupations, Industrial Technology and Trades and Industry.

Career and Vocational/Technical Education programs focus on career preparation, resource management, communication, technical skill development, applied academics, technological literacy; and personal skills and leadership. Programs are driven by authentic applications where students will be prepared for the workplace.

Through Career and Vocational/Technical Education students are empowered to be successful in today’s world.

B. CAREER AND VOCATIONAL/TECHNICAL EDUCATION IN MONTANA

The above definitions are also listed in the policies of the Montana superintendent of public instruction showing consistency between state and federal criteria that govern the use of funds for career and vocational/technical education. The acceptance of federal definitions indicates commitment to programs that meet the objective of preparing individuals for employment.

Postsecondary career and vocational/technical education in Montana is offered at the five postsecondary Colleges of Technology.

- Billings College of Technology – Montana State University
- Montana Tech – College of Technology – Butte
- Great Falls College of Technology – Montana State University
- Helena College of Technology – University of Montana
- Missoula College of Technology – University of Montana

Programs of postsecondary career and vocational/technical education are also offered at the following sites.

- Dawson Community College – Glendive
- Flathead Valley Community College – Kalispell
- Miles Community College – Miles City
- Montana State University Northern – Havre
- Tribal colleges
 - Fort Belknap College – Harlem
 - Fort Peck Community College – Poplar
 - Blackfeet Community College – Browning
 - Salish-Kootenai College – Pablo
 - Little Big Horn Community College – Crow Agency
 - Stone Child College – Box Elder
 - Chief Dull Knife College – Lame Deer

Many of the state’s local school districts operate secondary career and vocational/technical programs and some offer adult career and vocational/technical education and related apprenticeship training. Career and technical teacher education programs are conducted at various college campuses while special projects are funded at various locations including state institutions and Indian reservations.

State and federal funding support for career and vocational/technical education at the secondary level is by approval of the Office of Public Instruction. The superintendent of public instruction serves as executive officer for secondary career and vocational/technical education and heads a state-level staff that administers secondary career and vocational/technical education under the procedures of the superintendent. Postsecondary career and vocational/technical education is administered by the Montana Board of Regents.

C. CAREER AND VOCATIONAL/TECHNICAL EDUCATION PHILOSOPHY

It is the philosophy of the Montana state superintendent of public instruction that career and vocational/technical education opportunities shall be provided to all students who desire and can benefit from such opportunities irrespective of race, color, religion, creed, political ideas, gender, age, marital or parental status, physical or mental disability, or national origin. These courses and programs shall be conducted to encourage the full development of the interests, aptitudes, skills and capacities of all persons in the preparation for paid and unpaid occupational opportunities that require less than a baccalaureate or advanced degree, inclusive of the training and retraining of adults.

It shall further be the philosophy of the Montana state superintendent to adopt and administer policies to effect the orderly development of a system of career and vocational/technical education that is adaptable to changing needs, controlled to prevent unnecessary duplication, coordinated with applicable federal guidelines and requirements for career and vocational/technical education and funded to ensure growth and quality programming.

Starting with Part II, this booklet contains criteria for approval of programs in the various service areas and includes minimum requirements. These are designed to ensure that programs will possess career and vocational/technical characteristics and, further, will contain descriptions of what courses may be considered for approval when designed properly. **CAPITALIZED PORTIONS ARE TAKEN FROM RULES PRINTED IN THE ADMINISTRATIVE RULES OF MONTANA AND HAVE THE EFFECT OF LAW.** Additional information contained in each section should be utilized to develop and conduct quality programs.

PART II: GENERAL REQUIREMENTS OF SECONDARY CAREER AND VOCATIONAL/TECHNICAL EDUCATION PROGRAMS

A. GENERAL REQUIREMENTS

The following requirements are common to career and vocational/technical education programs of Agricultural, Business and Marketing, Family and Consumer Sciences, Health Occupations, Industrial Technology and Trades and Industry.

Approval of secondary career and vocational/technical education program proposals will be based on consideration of evidence that these criteria are met. Programs that fail to meet the following requirements will be given assistance from program specialists at the Office of Public Instruction.

1. THE PROGRAM SHALL HAVE THE PRIMARY OBJECTIVE OF DEVELOPING SKILLS LEADING TO EMPLOYMENT AS WELL AS ENTRY INTO ADVANCED CAREER AND VOCATIONAL/TECHNICAL TRAINING. Programs must be planned with regard for how they will relate to employment and training programs conducted in the geographic area of the school.
2. SPECIFIC OBJECTIVES SHALL BE DEFINED IN TERMS OF SKILLS TO BE DEVELOPED AND RELATED TO A SPECIFIC CAREER BY CLASSIFICATION OF INSTRUCTIONAL PROGRAM (CIP) CODE. (<http://nces.ed.gov/npec/papers/PDF/cip.pdf>)
3. Work experiences, including cooperative work experience (co-op), taught by an instructor endorsed in a career and vocational/technical education program, will be included in the program area enrollment report rather than a separate report with a separate CIP code.
4. CAREER AND TECHNICAL EDUCATION STUDENT ENROLLMENT REPORTS ARE REQUIRED FOR FUNDING. The following statements are clarifications of this report.
 - Vocational/Technical Credit verifies the nature of the coursework. If “no” is indicated for course(s) on the form, generally the enrollment for this/these course(s) will not be included in the program total. However, there may be exceptions where districts have set higher standards, i.e., where a vocational/technical course is required of all students. These exceptions may be approved by the program specialist based on research at the district level.
 - In order for a local Career and Technical Student Organization chapter to be eligible for funding, the chapter must be affiliated with the state and national organizations in the year for which the enrollment data and application were filed.

- Career experience supervision must:
 - include a minimum of five days of student-related instruction;
 - relate to the program for which the enrollment report is generated;
 - be based upon a contractual agreement between school teacher and district at the teacher's current rate of pay; and
 - be supervised by a properly endorsed career and vocational/technical instructor.
5. THE PROGRAM SHALL BE DETERMINED BY THE CAREER AND VOCATIONAL/TECHNICAL EDUCATION NEEDS OF STUDENTS BASED ON A NEEDS ASSESSMENT. PROGRAM INFORMATION SHALL BE PROJECTED FOR MORE THAN A ONE-YEAR PERIOD.
 6. PROGRAMS SHALL BE DEVELOPED AND CONDUCTED IN CONSULTATION WITH AN ADVISORY COUNCIL/COMMITTEE. (see appendix A)
 7. INSTRUCTION SHALL BE BASED ON AN ANALYSIS OF SKILLS AND KNOWLEDGE REQUIRED IN THE CAREER CLUSTER.
(<http://www.ed.gov/offices/OVAE/clusters/>)
 8. THE PROGRAM SHALL DEVELOP PERSONAL, CAREER, AND LEADERSHIP SKILLS. CAREER AND TECHNICAL STUDENT ORGANIZATIONS (CTSO'S) THAT FOSTER THESE SKILLS ARE: FFA, Family, Career and Community Leaders of America (FCCLA), DECA – an Association of Marketing Students, Business Professionals of America (BPA), SKILLSUSA-VICA, AND Technology Students Association (TSA).
 9. PROVISION SHALL BE MADE FOR CAREER AND VOCATIONAL/TECHNICAL GUIDANCE AND SHALL INCLUDE, BUT NOT BE LIMITED TO, CAREER INFORMATION AND COUNSELING.
 10. INSTRUCTORS SHALL BE CERTIFIED IN ACCORDANCE WITH THE BOARD OF PUBLIC EDUCATION REQUIREMENTS AND ENDORSED IN THE PROGRAM AREA FOR WHICH THEY ARE MAKING APPLICATION. Exceptions may be made for emerging career and technical programs where industry certification is required for a specific skill area, such as Cisco academies, and where such certification is an industry standard.
 11. INSTRUCTIONAL EQUIPMENT AND FACILITIES SHALL BE MODERN AND REFLECTIVE OF INDUSTRY STANDARDS AND ADEQUATE FOR THE MAINTENANCE OF ACCEPTABLE EDUCATION, HEALTH AND SAFETY STANDARDS.
 12. PROVISIONS SHALL BE MADE FOR FOLLOW-UP OF SECONDARY GRADUATES.
 13. THE MAXIMUM NUMBER OF STUDENTS PER CLASS SHALL BE DETERMINED WITH CONSIDERATION GIVEN TO THE INSTRUCTIONAL ENVIRONMENT, EQUIPMENT, SUPERVISION, SAFETY, SPACE AND RESOURCES, AND INDIVIDUAL STUDENT INSTRUCTION.
 14. PROGRAMS SHALL ENSURE EQUAL ACCESS FOR ALL STUDENTS.

15. EACH SCHOOL SHALL CONDUCT A YEARLY CAREER AND VOCATIONAL/ TECHNICAL PROGRAM SELF-EVALUATION AND SUBMIT A COPY TO THE OFFICE OF PUBLIC INSTRUCTION. THE SCHOOL SHALL COOPERATE WITH THE OFFICE OF PUBLIC INSTRUCTION IN PROGRAM REVIEW AND EVALUATION ACTIVITIES.
16. LOCAL EDUCATION AGENCIES SHALL USE CAREER AND VOCATIONAL/ TECHNICAL EDUCATION FUNDS TO ADD TO OR ENHANCE LOCAL FUNDS TO IMPROVE CAREER AND VOCATIONAL/TECHNICAL PROGRAMS. FUNDS WILL NOT BE APPROVED WHEN IT HAS BEEN DETERMINED THAT REPLACEMENT (supplanting) OF LOCAL FUNDS WILL OCCUR. A school must not decrease the amount spent in the career and vocational/technical program from one year to the next, figured either on an aggregate or per student basis, unless “unusual circumstances” exist, such as large expenditures in previous years for equipment.
17. ACCOUNTING PROCEDURES MUST USE STANDARD SCHOOL ACCOUNTING CODES. A yearly certified expenditure report must be submitted showing the actual expenditure of funds compared to the last approved budget. Records will be kept locally for audits.

B. SECONDARY CAREER AND VOCATIONAL/TECHNICAL EDUCATION FORMS DUE DATES CALENDAR

Requirements for State and Federal Career and Vocational/Technical Education Funds
Fiscal Year July 1 to June 30

August	Annual Carl Perkins Funding to be received at local districts.
November	Annual State Career and Technical Education Funding to be received at local districts.
December	Carl Perkins Accountability Core Indicators 2-4.
January	RFP application for competitive Perkins federal career and vocational/technical education reserve & non-traditional projects due to the Division of Career and Technical Education, Office of Public Instruction.
February	Annual State Secondary Career and Vocational/Technical Education Student Enrollment Reports due to the Division of Career and Technical Education, Office of Public Instruction.
May	Due to the Division of Career and Technical Education, Office of Public Instruction: <ul style="list-style-type: none">• Carl D. Perkins Annual Application• Carl Perkins Accountability Core Indicator 1• Annual State Career and Technical Education Application

C. ANNUAL STATE SECONDARY CAREER AND VOCATIONAL/TECHNICAL EDUCATION APPLICATION PROCEDURES

To apply for Annual State Secondary Career and Vocational/Technical Education Additional Cost Funding, schools must submit to the superintendent of public instruction:

1. Proposal for an Annual State Secondary Career and Vocational/Technical Education Program and application for Funds Under 20-7-305, MCA form
Submit for each secondary career and vocational/technical education program (Agriculture Education, Business and Marketing Education, Family and Consumer Sciences Education, Health Occupations Education, Industrial Technology Education, Trades and Industry Education).
2. Self-Assessment for Montana Career and Vocational/Technical Education Programs
The self-evaluation form is to be completed by designated personnel (i.e., administration, instructors, and advisory committee members) and be inclusive of all approved career and vocational/technical education. This assures the Office of Public Instruction that local program evaluations take place on an annual basis in accordance with the approved program standards.
3. Annual State Secondary Career and Vocational/Technical Education Student Enrollment Report
Submit for each approved career and vocational/technical education class. Report each program on a separate form. The information from this form will be used in the formula to allocate state career and vocational/technical education monies to the local education agencies.

Schools desiring to participate in the state's additional cost funding for secondary career and vocational/technical education programs must have operated the program for at least one year on approved status prior to receiving funding.

The above procedures have been established by the superintendent of public instruction in compliance with Montana statutes and shall be the governing rules for approval and distribution of monies.

D. SECONDARY CAREER AND VOCATIONAL/TECHNICAL PROGRAM EVALUATION

Evaluation shall be an integral part of Montana's career and vocational/technical education system. The state director for career and vocational/technical education services shall evaluate each career and vocational/technical program approved by the superintendent of public instruction.

In an attempt to comply with the above rule, the Division of Career and Technical Education proposes the following procedures for secondary career and vocational/technical program evaluation.

Program evaluations will consist of either an on-site visitation or a desk audit. Schools that have not received an on-site evaluation within the previous five-year period may be scheduled for an on-site evaluation.

Accountability for the distribution of career and vocational/technical funds and the desire for additional planning and improvement of local career and vocational/technical programs require the Division of Career and Technical Education to 1) conduct a program evaluation (either a desk audit or on-site visit) or 2) receive an annual self-evaluation from the local district as part of the program application process.

Program Probation

A secondary career and vocational/technical program may be placed on probation for:

- a. not adhering to specific program standards;
- b. not adhering to general program standards;
- c. inappropriate expenditures; and/or
- d. noncompliance with reporting deadlines.

Placing a program on probationary status means a program has not met one or more of the identified criteria. If the program is an ongoing (previously funded) program, the school has a specific period of time to correct the deficiency and meet or exceed the standard. When the condition is corrected and the standard met, the probationary status is removed and the program is approved for future funding.

If the condition is not corrected within the specified time frame (one year) and the standard is not met, the program will not be approved for career and vocational/technical excess cost funding the following year and a payback may be necessary.

E. SECONDARY CAREER AND VOCATIONAL/TECHNICAL STUDENT FOLLOW-UP INFORMATION

It is required that provisions shall be made for job placement, annual follow-up of program completers, program evaluation and employer follow-up. The Administrative Rules of Montana, Rule 10.41.120, "State Career and Vocational/Technical Education Data Collection," requires that INSTITUTIONS/SCHOOLS OFFERING CAREER AND VOCATIONAL/TECHNICAL EDUCATION SHALL REPORT ON A TIMELY BASIS TO ENABLE THE STATE DIRECTOR OF K-12 CAREER AND VOCATIONAL/TECHNICAL EDUCATION TO PREPARE REQUIRED STATE AND FEDERAL REPORTS.

In an attempt to comply with the above rules, the Division of Career and Technical Education may implement a secondary career and vocational/technical student follow-up and information system. The system would provide data relating to placement.

Student enrollment data will be collected statewide as a basis for state career and vocational/technical education funding. So as not to duplicate efforts, reporting done for Carl Perkins will be utilized.

Specific Purposes of Student Follow-Up

1. To develop justification for continuation or modification of existing programs or implementation of new ones.
2. To evaluate existing instructional methods and provide an input source for improvement in order to update and maintain relevant career and vocational/technical training programs.

F. STANDARDS FOR LOCAL CAREER AND VOCATIONAL/ TECHNICAL ADVISORY COMMITTEES

SCOPE

PROGRAMS SHALL BE DEVELOPED AND CONDUCTED IN CONSULTATION WITH AN ADVISORY COUNCIL/COMMITTEE.

- A career and vocational/technical advisory committee must be approved (by the school board) for every career and vocational/technical program.
- The program advisory committee is required to meet at least once per year and minutes of all meetings must be on file.
- In schools where three or fewer career and vocational/technical programs are available, one general Advisory Committee with members who represent each program area may be utilized.
- A Career and Vocational/Technical Education ADVISORY COMMITTEE IS A GROUP OF PERSONS, the majority of whom are outside the education profession, who are representative of the community, and who are educated/trained/employed in careers related to the career and vocational/technical education programs, WHO ADVISE AND ASSIST DECISION MAKERS ON THE DESIGN AND MAINTENANCE OF RELEVANT CAREER AND VOCATIONAL/TECHNICAL EDUCATION PROGRAMS BASED ON THE ASSESSED NEEDS OF THE COMMUNITY, REGION, STATE, OR NATION. THE ADVISORY COMMITTEE'S PRIMARY FUNCTION IS TO PROVIDE INDUSTRY-SPECIFIC INFORMATION AND ASSISTANCE TO THE CAREER AND VOCATIONAL/TECHNICAL EDUCATION PROGRAM.

SECONDARY AGRICULTURAL EDUCATION PROGRAMS

VISION

Agricultural education envisions a world where all people value and understand the vital role of agriculture, food, fiber, and natural resources systems in advancing personal and global well-being.

MISSION

Agricultural education prepares students for successful careers and a lifetime of informed choices in the global agriculture, food, fiber, and natural resources systems.

PART I: SCOPE

Agricultural education develops entry-level knowledge, skills, attitudes and experiences in agricultural business, science and production. This includes careers in supplies, sales, services, product processing, natural resources, mechanics, horticulture and forestry. Agricultural education prepares the student for further education, self-employment or other entry-level jobs at the semi-skilled, skilled or technical level.

A course of study in agricultural education will give the student the opportunity to:

1. Select self-employment or an appropriate career in one of the areas listed above,
2. Display leadership, citizenship, and cooperation developed through membership in the career and technical student organization (FFA - National FFA Organization), and
3. Demonstrate knowledge, skills, attitudes and practical experience for self-employment or entry-level employment in:
 - a. basic soils management; plant growth and reproduction; field crop production, marketing, and management; range management; horticulture; forestry and natural resource management;
 - b. selection, breeding and rearing of commercially important species of livestock; animal nutrition, health and care; and the profitable management and marketing of livestock;
 - c. agriculture mechanization, including safety and maintenance of hand and power tools, welding equipment, basic electricity, building construction, applied power and machinery;
 - d. agricultural management, marketing, and economic principles; business and financial planning, including leasing, credit, depreciation and machinery economics;
 - e. propagation, management and marketing of economically important horticulture crops; and
 - f. forestry production, transportation, processing, marketing and distribution.

PART II: OCCUPATIONS TO BE SERVED

The Classification of Instructional Programs (CIP), published by the U.S. Department of Education, lists nearly 100 codes, which describe the occupations served by agriculture education. To simplify reporting, agriculture education programs in Montana are listed in the following broad occupational categories:

- 01.0301 Agricultural Production Workers and Managers – An instructional program that generally prepares individuals to plan and economically use facilities, natural resources, labor and capital in the production of plant and animal products.

- 01.0201 Agricultural Mechanization/Technology – An instructional program that prepares individuals in a general way to sell, select and service agriculture or agribusiness technical equipment and facilities, including computers, specialized software, power units, machinery, equipment, structures and utilities. Includes instruction in agricultural power units; the planning and selection of materials for the construction of agricultural facilities; the mechanical practices associated with irrigation and water conservation; erosion control; and data processing systems.
- 03.0401 Forest Harvesting and Production Technology – An instructional program that prepares individuals to assist foresters in managing, protecting and harvesting timber stands and specialty forest crops. Includes instruction in equipment maintenance and repair, tree planting, selection and identification of trees for special attention, transplantation and harvesting, and forest management and safety procedures.
- 01.0601 Horticulture Services Operations and Management– An instructional program that generally prepares individuals to produce, process and market plants, shrubs, and trees used principally for ornamental, recreational, and aesthetic purposes and to establish, maintain, and manage horticultural enterprises.
- 01.0101 Agricultural Business and Management – An instructional program that generally prepares individuals to apply modern economic and business principles involved in the organization, operation and management of farm and agricultural businesses.

PART III: GENERAL PROGRAM REQUIREMENTS

In order to be approved for funding, programs must meet the general requirements as outlined in the general guidelines.

PART IV: PROGRAM RECOMMENDATIONS

1. Content

The curriculum at the 9th and 10th grade levels should be designed to provide a basic background in agriculture/agribusiness and FFA that is necessary for in-depth study at the 11th and 12th grades.

In order to ensure a general background at the 9th and 10th grades and in-depth studies at the 11th and 12th grades, it is recommended that the Montana Agriculture Education Curriculum be followed. A copy may be obtained from the Agriculture Education Department at MSU-Bozeman.

The following curriculum model portrays the content of the courses at the two levels of instruction.

Montana’s Curriculum Model for the High School Agricultural Education Program

Core Curriculum
(Grades 9-10)

Animal Husbandry

Human Resource Development

Ag Resources

Ag Physical Sciences

Financial Resources

Specialized Programs
(Grades 11-12)

Specialized Animal Husbandry

Advanced Human Resource Development

Specialized Ag Resources

Specialized Ag Physical Sciences

Advanced Financial Resources

In addition to regular instructional activities, all students enrolled in agriculture classes (grades 9-12) are encouraged to plan and conduct a supervised agricultural experience program under the direct supervision of an agricultural education teacher.

Supervised agricultural experiences should be in-line with the student's occupational objective, of high quality and sufficient duration so that at the completion of the program the student should have the competencies needed for job entry or for more advanced training. This supervised experience can be obtained through entrepreneurship or as an employee on a farm or ranch, ag-related business, and/or laboratory within the school.

It is recommended that travel funds be provided by the district in addition to the instructor's salary in order that the teacher may supervise and coordinate the occupational experience phase of the program.

2. Scheduling

The duration of the programs shall be two or more years, with four years recommended. During the regular school year, the weekly duration of agricultural education courses shall, as a minimum, correspond with the Standards for Accreditation of Montana Schools (225 minutes per week). However, longer blocks of time are encouraged at the 11th and 12th grade levels.

3. Facilities, Equipment and Resources

The local school district is expected to provide and maintain adequate classroom, shop, laboratory, storage, tools, equipment, and teaching aids necessary to enable students to meet their occupational objectives.

In a specialized program additional facilities will be necessary. For example, a large greenhouse will be needed for a horticulture program.

Facilities and equipment must meet all current state and federal health and safety regulations.

The equipment should replicate as nearly as possible that found in the occupations for which training is provided.

Minimum Square Footage Recommended

<u>Area</u>	<u>1 Teacher</u>	<u>2 Teachers</u>
Office	120	180-240
Classroom	840	840
Classroom Storage	120	60/additional teacher
Shop Storage	320	480
Mechanics Laboratory	3,800	4,200

4. Career and Technical Student Organization

It is recommended that each agricultural education program conduct FFA activities as an integral part of the program. The agricultural education instructor shall serve as the advisor to the local FFA chapter. In order to maintain a local FFA chapter, the chapter must be in good standing with the Montana FFA Association and National FFA Organization.

5. Teacher Certification and Qualification

Instructor(s) of approved agricultural education programs shall hold a Montana class 1, 2 or 5 teaching certificate with endorsement in agriculture (61).

The above requirements are generally satisfied with a bachelor's degree in agricultural education and one year's agriculture experience.

Questions concerning certification should be directed to the Educator Licensure, Office of Public Instruction, PO Box 202501, Helena, MT 59620-2501.

6. Length of Agricultural Education Program

It is recommended that agricultural education instructors be employed for a minimum of 10 ½ months. All portions of an agricultural education program must be supervised by a certified agricultural education teacher.

Due to the seasonal nature of agriculture/agribusiness, it is recognized that many of the related experiences necessary for adequate training of the students occur during the summer months; therefore, the need for an 11 or 12-month program (contract) cannot be overemphasized.

The primary purpose of supervised agricultural experience is to develop competencies needed in agricultural occupations. Supervised agricultural experience is an integral part of the agricultural education instructional program that allows students to become involved in tasks performed by people in agricultural occupations.

Agricultural education teachers, during extended employment, assist students in reaching their educational objectives to:

- a. locate training stations, which will provide experiences closely related to students' occupational objectives;
- b. develop training plans and training agreements in cooperation with employers and student's parents;
- c. make periodic visitations to observe, instruct, and evaluate student progress;
- d. conduct conferences with prospective students and their parents;
- e. instruct and supervise students with summer activities such as fairs, judging events, and leadership training;
- f. supervise FFA meetings and FFA activities;
- g. assist students with agricultural-related independent study;
- h. meet with local advisory committee to review program activities and curriculum; and
- i. follow-up and assist graduates of the agricultural education program;

In order to ensure a high quality agriculture experience program for agricultural education students, the following procedures are recommended:

- a. The instructor should develop a summer plan listing activities planned and the time allotment for each.

- b. the instructor should review the summer plan with the school administration and make any necessary adjustments. Leave a copy with the school administrator.
- c. The instructor should make periodic progress reports to the school administration.
- d. A log of the instructor's summer activities may also be beneficial in providing information to the local school board.

7. Student/Teacher Ratio

Maintaining a reasonable student/teacher ratio helps to ensure high quality agriculture education instruction. Agricultural education students "learn by doing" in a laboratory or shop; therefore, a higher than usual teacher level of supervision of student activity is required.

It is recommended that the student/teacher ratio should not exceed a maximum of 20 per class.

PART V: SECONDARY COOPERATIVE WORK EXPERIENCE COMPONENT

Career and vocational/technical cooperative work experience programs must provide all students with on-the-job experience and training along with career and vocational/technical classroom instruction related to their occupational interests. A cooperative arrangement among the school, employer, and student is therefore necessary. The students' classroom activities and on-the-job experiences must be planned and supervised by the school and the employer to ensure that both activities contribute to the student's employability.

CAREERS TO BE SERVED

Programs at the secondary level may serve one or several of the job titles by classification of instructional program codes in the following areas:

- Agricultural Education
- Business and Marketing Education
- Health Occupations Education
- Trades and Industrial Education
- Family and Consumer Science Education
- Industrial Technology Education

WEB SITES

<http://www.teamaged.org/>

<http://www.ffa.org>

<http://www.opi.state.mt.us/Agriculture/Index.html>

<http://www.opi.state.mt.us/FFA.Index.html>

SECONDARY BUSINESS/TECHNOLOGY AND MARKETING EDUCATION PROGRAMS

VISION

Business/Technology and Marketing Programs and teachers are dedicated to the preparation of students for a world-class workforce.

MISSION

Through communication, professional development, and coordination of talent, a determined effort is under way to make Montana a great place for students to meet their career goals and for employers to be confident in the relevance of skills being taught and learned.

PART I: SCOPE

The business/technology and marketing programs are designed to prepare students for entry-level employment in business/technology and marketing occupations and/or for further education/training. This field offers challenging and rewarding career opportunities for all individuals. To be approved, business/technology and marketing programs must be designed to educate students about business/technology and marketing and prepare them for employment in a business occupation area or field and/or for continuing education.

PART II: OCCUPATIONS TO BE SERVED

The Classification of Instructional Programs (CIP), published by the U.S. Department of Education, lists nearly 100 codes, which describe the occupations served by business education. To simplify reporting, business education programs in Montana are listed in the following two broad occupational categories:

11 COMPUTER AND INFORMATION SCIENCES AND SUPPORT SERVICES

A group of instructional programs that focus on the computer and information sciences and prepare individuals for various occupations in information technology and computer operations fields.

52 BUSINESS, MANAGEMENT, MARKETING, AND RELATED SUPPORT SERVICES.

A group of instructional programs that prepare individuals to perform managerial, technical support, and applied research functions related to the operation of commercial and non-profit enterprises and the buying and selling of goods and services.

The CIP code is used to refer to scope and sequence of courses that comprise a variety of business/technology and marketing programs.

PART III: GENERAL PROGRAM REQUIREMENTS

In order to be approved for funding, programs must meet the general requirements as outlined in Part II of these guidelines (pages 3-5).

PART IV: PROGRAM RECOMMENDATIONS

1. The most current Montana Framework for Business Education should be referred to when developing curricula for courses and programs in business/technology and marketing education.
2. The courses in approved business/technology and marketing programs must be offered in an organized and logical sequence that flows from beginning to advanced. (See General Guidelines, Part I: Definitions and Philosophy)

a. Organization and Content

- 1) Approval of program units for funding will be based on the program curriculum, a sequence of courses that provides individuals with the academic and technical skills needed to prepare for further education and for careers, and the instructor's certification.
- 2) It is highly recommended that the program have an active advisory committee, a career and technical student organization and other criteria in these guidelines.
- 3) Brief Program Guidelines:
 - (a) Keyboarding or Input Media is a K-12 program. The course will provide students with the ability to input data and create a variety of documents using touch-typing techniques (core standards).
 - (b) Computer Application Courses will provide students with the ability to identify, select, evaluate, use, install, upgrade and customize application software, diagnose and solve problems occurring from application software installation and use (core standards).
 - (c) Coursework should also include competencies in Business Ethics, Career Education and Personal Finance to prepare students to meet the changing demands of the business world, especially as it responds to the changing use of technology.
 - (d) Marketing and Management Courses prepare students for entry-level employment in fields relating to marketing and management, such as marketing concepts, business management, business law, accounting, economics, international business, entrepreneurship and e-commerce.
 - (e) Administrative Office Systems coursework should include integration of advanced computer applications, information management, communications and administrative management.
 - (f) Information Technologies coursework should include instruction in multi-media development, network systems, programming and software development, and computer maintenance and management.
 - (g) A recommended method of providing practical, realistic work experience is through cooperative work experience, which meets the criteria that follows in Part V.

b. Facilities, Equipment

The type and amount of equipment needed by the business/technology and marketing education department for classroom activity varies with the program objectives, size of class and variety of courses offered. The equipment must be representative of the latest technology available for business and industry use and arranged in a setting simulating current business environment. All facilities must be adequate for the number of students involved. Desks and chairs should be ergonomically designed to meet all students' needs and requirements. The facility and equipment should be arranged to emphasize safety and efficiency.

c. Career and Technical Student Organizations

All business/technology and marketing education programs should maintain a local Career and Technical Student Organization in good standing with the state and national organizations. Montana recognizes Business Professionals of America (The mission of Business Professionals of America is to contribute to the preparation of a world-class workforce through the advancement of leadership, citizenship, academic, and technological skills.), or DECA--An Association Of Marketing Students. (DECA's mission is to enhance the co-curricular education of students with interests in marketing, management and entrepreneurship.)

d. Instructor Qualifications

The instructor shall be certified to teach business and marketing education in the state of Montana. (General Requirements, Part II, Section A, Number 10)

e. Class Size

Business/technology and marketing education program class size should meet current state standards for classroom size.

PART V: SECONDARY COOPERATIVE WORK EXPERIENCE COMPONENT

Career and vocational/technical cooperative work experience programs must provide all students with on-the-job experience and training along with career and vocational/technical classroom instruction related to their occupational interests. A cooperative arrangement among the school, employer, and student is therefore necessary. Students' classroom activities and on-the-job experiences must be planned and supervised by the school and the employer to ensure that both activities contribute to the students' employability.

CAREERS TO BE SERVED

Programs at the secondary level may serve one or several of the job titles by classification of instructional program codes in the following areas:

- Agriculture Education
- Business and Marketing Education
- Health Occupations Education
- Trades and Industrial Education
- Family and Consumer Sciences Education
- Industrial Technology Education

REQUIREMENTS

1. Organization and Content

Programs must provide students with on-the-job or simulated experiences and training related to their career and vocational/technical program.

- a. A cooperative arrangement among the school, the employer and the student is necessary. Students' classroom and on-the-job activities must be coordinated and supervised by the school and the employer to ensure that activities contribute to the students' employability and total education.
- b. A signed training agreement must be entered into by the work experience coordinator, educational agency, parent or legal guardian and trainee with a copy maintained by the work experience coordinator for the duration of the work experience.
- c. Employers of students placed in cooperative work experience must adhere to state and federal labor laws.
- d. Students enrolled in a work experience career and vocational/technical education program shall receive credit for related classroom instruction and on-the-job training.
- e. A training plan must be developed for each student. The training plan will include a minimum of three objectives, a job description and a program of learning activities.
- f. The time requirement for students in work experience must be equivalent to the time requirement for credit to be earned.
- g. Budget items that may be considered as additional costs for funding purposes are noted in 10.41.101 (1)(a) through (1)(d).

2. Evaluation and supervision

Teacher coordination visits to training stations should be made at least once a semester per student for evaluation and supervision.

3. Teacher Certification and Qualifications

See General Requirements, Part II, Section A, Number 10.

4. Time

The coordinator must be provided with coordination time over and above his or her regular preparation period(s). A minimum of one class period of coordination time per day or an equivalent of five class periods per week must be allotted for up to 30 cooperative students.

SECONDARY FAMILY AND CONSUMER SCIENCES EDUCATION PROGRAMS

VISION

Family and Consumer Sciences Education empowers individuals and families across the life span to manage the challenges of living and working in a diverse global society. Our unique focus is on families, work and their interrelationships.

MISSION

The mission of Family and Consumer Sciences Education is to prepare students for family life, the world of work, and careers in Family and Consumer Sciences by providing opportunities to develop the knowledge, skills, attitudes, and behaviors needed for:

- strengthening the well being of individuals and families across the life span;
- becoming responsible citizens and leaders in family, community, and work settings;
- promoting optimal nutrition and wellness across the life span;
- managing resources to meet the material needs of individuals and families;
- balancing personal, home, family and work life;
- using critical and creative thinking skills to address problems in diverse family, community, and work environments;
- successful life management, employment, and career development;
- functioning effectively as providers and consumers of goods and services; and
- appreciating human worth and accepting responsibility for one's actions and success in family and work life.

PART I: SCOPE

Family and Consumer Sciences Education has extensive academic and occupational content. Family and Consumer Sciences Education utilizes integrated academics to prepare students for:

- developing careers and work opportunities in Family and Consumer Sciences;
- understanding the interrelationships of work and family; and
- living together in a global and diverse community.

PART II: OCCUPATIONS TO BE SERVED

In the Classification of Instructional Programs (CIP), published by the U.S. Department of Education, code 19 refers specifically to FAMILY AND CONSUMER SCIENCES/HUMAN SCIENCE. Code 19 is broken down into the following subdivisions:

- 19.00 Work and Family Studies
- 19.01 Family and Consumer Sciences/Human Sciences, General
- 19.02 Family and Consumer Sciences/ Human Sciences Business Services
- 19.04 Family and Consumer Economics and Related Studies
- 19.05 Foods, Nutrition, and Related Services
- 19.06 Housing and Human Environments
- 19.07 Human Development, Family Studies, and Related Services
- 19.09 Apparel and Textiles
- 19.99 Family and Consumer Sciences/Human Sciences, Other

These documents form the basis for the direction the Office of Public Instruction is giving to Family and Consumer Sciences education programs in Montana schools.

PART III: INSTRUCTOR QUALIFICATIONS

The instructor will meet state of Montana certification and endorsement requirements. Certification is required in accordance with the Board of Public Education policies and Family and Consumer Sciences/Home Economics requirements.

PART IV: PROGRAM RECOMMENDATIONS

The curriculum provides students with academic and technical skills to prepare for their choices in individual and family lifestyle, careers and community involvement.

1. Organization and Content
 - a. The most current Montana Guidelines for Family and Consumer Sciences should be used as a guide when developing curricula for courses and programs in Family and Consumer Sciences Education. For standards and competencies, refer to the National Standards for Family and Consumer Sciences Education or contact the university or state specialist.
 - b. Approval of programs for funding will be based on:
 - 1) appropriate teacher certification; and
 - 2) the courses in approved Family and Consumer Sciences programs must be offered in an organized and logical sequence that lead to a career.
 - c. Schools need to be sure class titles show a pathway, which leads to a career.
 - d. It is highly recommended that a program have an FCCLA Chapter. Whenever possible the FCCLA program should be incorporated into classroom work. A program which has an FCCLA student organization will be funded at a higher level.
 - e. It is highly recommended that each Family and Consumer Sciences program have an advisory council.

PART V: PROGRAM GUIDELINES

BASIC COURSE

“Family, Career and Community Resources” is a basic program, which all students should take before entering the pathways that provides an introduction to all curriculum phases of Family and Consumer Sciences. It is important at this level that the Scans Competencies listed in the FCCLA Star Event Manual is taught. The Scans Competencies include: Resources, Interpersonal Skills, Information Systems, Technology, Basic Skills, Thinking Skills and Personal Responsibility. It would be appropriate for students in grades 7-8-9. If students receive this program component in grades 7-8 they can start the pathways in high school. If the program is not received in grades 7-8 the class should be taught in high school.

PATHWAY OPTIONS*

1. A Full-Time 9-12 Program that is approved for funding should consist of one of the following curriculum scenarios:
 - a. Sequential program showing two of the pathways, three courses per pathway.
 - b. Sequential program, with three classes in one pathway plus a sequence of two courses in two other pathways.
 - c. Sequential program, with four different pathways and a minimum of two courses per pathway.
 - d. Block scheduling, sequential program with a minimum of two pathways. The number of classes in sequence will be determined by the form of block scheduling in the school.

*Refer to the model “Montana Curriculum Leading to Pathways for Family and Consumer Sciences” on page 23.

Schools need to consider expanding on their course sequences by alternating courses offered every other year.

2. A Part-Time and the Minimum 9-12 Program that is approved for funding should consist of:
 - a. The teacher must be endorsed to teach Family and Consumer Sciences Education (teaching endorsement 63).
 - b. A part-time Family and Consumer Sciences teacher must teach a minimum of two classes which follow one pathway.

PART VI: FACILITIES AND EQUIPMENT

1. The type and amount of equipment needed by the Family and Consumer Sciences Department for classroom activity will vary with the program objectives, the size of the classes and the variety of courses offered.
2. The department should have adequate storage for teaching materials, equipment and supplies.
3. Facilities and equipment must meet all current state and federal health and safety regulations.
4. The school administrators and Family and Consumer Science instructor shall set up an annual budget to provide for equipment, operation and maintenance of the Family and Consumer Sciences Department.
5. Current technology, including computers and computer labs, must be available to the Family and Consumer Sciences Department and students.
6. Departments must be furnished with up-to-date materials, equipment and supplies.

PART VII: FAMILY, CAREER AND COMMUNITY LEADERS OF AMERICA

It is recommended that all affiliated with Family and Consumer Sciences programs maintain a student organization in good standing with state and national organizations. Montana recognizes the Family, Career and Community Leaders of America. The mission of Family, Career and Community Leaders of America is: To promote personal growth and leadership development through family and consumer sciences education. Focusing on the multiple roles of family member, wage earner and community leader, members develop skills for life through:

- Character development
- Creative and critical thinking
- Interpersonal communication
- Practical knowledge
- Career and vocational/technical preparation

The Family and Consumer Sciences instructor shall serve as advisor to the local FCCLA Chapter.

PART VIII: CLASS SIZE

Family and Consumer Sciences class size should meet current state standards for classroom size, basic safety and adequate facilities. The school administrators and teacher should decide together the proper class size based on safety of students and space available.

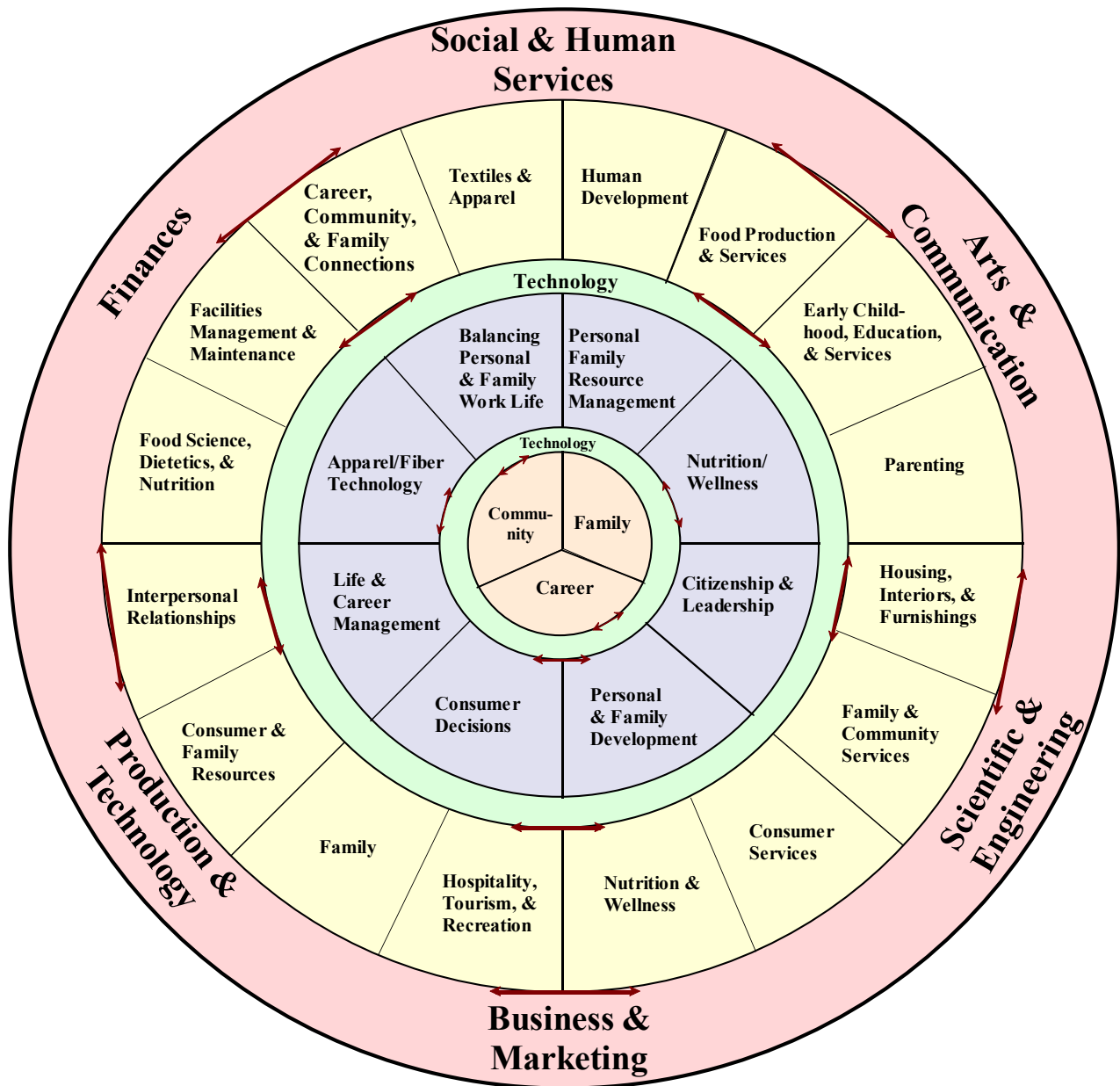
PART IX: SECONDARY COOPERATIVE WORK EXPERIENCE COMPONENT

Family and Consumer Sciences Curriculum must provide students with the final step in the pathway, which leads to a career.

1. CAREERS TO BE SERVED
 - a. Social and Human Services
 - b. Arts and Communication
 - c. Scientific and Engineering
 - d. Business and Marketing
 - e. Production and Technology
 - f. Finances

2. It is expected that all schools offer a class that could launch a student in the direction of a career. This would be the end class in a pathway. This might be a class specific to a curriculum such as an Occupational Child Care Class, an Occupational Fabric Technology Class or an Occupational Food Marketing Class. It might be an Entrepreneurship Class, which would guide students through setting up a small business. In the Entrepreneurship Class students might all be planning for a business in a different direction yet by the direction they choose they are preparing a business plan which could be used to launch a career.

MONTANA CURRICULUM LEADING TO PATHWAYS FOR FAMILY AND CONSUMER SCIENCES



SECONDARY INDUSTRIAL/TECHNOLOGY EDUCATION PROGRAMS

(All portions capitalized are requirements for program approval.)

VISION

Industrial/Technology programs provide a comprehensive and technological learning experience to prepare students to become productive citizens in an ever-changing society.

MISSION

The mission of Industrial/Technology Education is to increase each student's ability to comprehend and apply the concepts of industrial/technological applications and systems in a rapidly changing technological society.

PART I: SCOPE

Industrial/Technology Education is a study of technology and industry, which provides an opportunity for students to learn about the processes and knowledge related to technology that are needed to solve problems and extend human capabilities. The strength of Industrial/Technology Education is that of a hands-on approach that adds an emphasis of the technological nature of life and industry.

STATE SECONDARY CAREER AND TECHNICAL EDUCATION FUNDING MAY BE APPROVED FOR INDUSTRIAL/TECHNOLOGY EDUCATION PROGRAMS IN SECONDARY SCHOOLS AS SUCH PROGRAMS 1) PROVIDE EXPERIENCES FAMILIARIZING STUDENTS WITH THE EFFECTS OF TECHNOLOGY ON INDUSTRY AND RELATED OCCUPATIONS AND SOCIETY 2) PREPARE STUDENTS FOR ENTRY INTO ADVANCED TRADE, INDUSTRIAL, OR TECHNICAL EDUCATION PROGRAMS.

PART II: OCCUPATIONS TO BE SERVED

The Classification of Instructional Programs (CIP), published by the U.S. Department of Education, are intended to establish standard terminology to improve the communication and exchange of information on instructional programs and to standardize record keeping.

The five main occupational cluster areas served by industrial/technology programs in Montana are:

- 10 Communication Technology
- 15 Engineering Technology
- 46 Construction Trades
- 48 Precision Production Trades
- 26.12 Bio-technology

PART III: GENERAL REQUIREMENTS

In order to be approved for funding, programs must meet the following criteria in addition to the general career and technical education requirements as outlined in Part II of these guidelines (pages 3-5).

PART IV: PROGRAM INFORMATION

1. FUNDING WILL BE GENERATED FOR CIP CODE PROGRAMS AS PER STATE FORMULA.
2. *THE NATIONAL STANDARDS FOR TECHNOLOGICAL LITERACY: CONTENT FOR THE STUDY OF TECHNOLOGY* (2000) AND (THE CURRENT) *A PLANNING GUIDE FOR MONTANA TECHNOLOGY EDUCATION PROGRAMS* SHOULD BE USED AS THE BASIS FOR DEVELOPING PROGRAMS.

3. REQUIREMENTS OF ELIGIBLE INDUSTRIAL/TECHNOLOGY EDUCATION PROGRAMS. TO RECEIVE CAREER AND TECHNICAL EDUCATION FUNDING, INDUSTRIAL/TECHNOLOGY EDUCATION COURSEWORK SHOULD BE ARTICULATED FROM GRADES 7-12.
 - a. THE FOLLOWING MODEL SHOULD BE USED AS THE BASIS FOR ORGANIZING THE PROGRAM AND ESTABLISHING SEQUENTIAL COURSE OFFERINGS.
 - 1) GRADES 5-8: EXPLORING INDUSTRIAL/TECHNOLOGY EDUCATION (OR SIMILAR TITLE) COURSES WITH HIGH-INTEREST UNITS THAT INTRODUCE STUDENTS TO INDUSTRY AND TECHNOLOGY AND HEIGHTEN THEIR INTEREST IN THIS FIELD OF STUDY, PROMOTING ENROLLMENT IN HIGH SCHOOL I/TE AND T&I PROGRAMS.
 - 2) GRADES 9-12: A SEQUENCE OF RELEVANT COURSES, ORGANIZED AROUND THE CLUSTERS OF COMMUNICATION TECHNOLOGY, CONSTRUCTION TECHNOLOGY, MANUFACTURING TECHNOLOGY, BIO-RELATED TECHNOLOGY, AND POWER/TRANSPORTATION TECHNOLOGY MUST BE OFFERED.
 - b. INSTRUCTORS MUST CARRY PROPER SECONDARY CERTIFICATION WITH AN ENDORSEMENT TO TEACH INDUSTRIAL/TECHNOLOGY EDUCATION AS DETERMINED BY THE BOARD OF PUBLIC EDUCATION.
 - c. ACTIVITIES INTENDED TO INCREASE STUDENT AWARENESS OF CAREER OPTIONS, REQUIREMENTS AND EDUCATIONAL OPPORTUNITIES MUST BE INCORPORATED INTO THE PROGRAM.
 - d. INTEGRATION OF RELATED MATH, SCIENCE, COMMUNICATION, AND *THE SECRETARY'S COMMISSION ON ACHIEVING NECESSARY SKILLS* (SCANS) COMPETENCIES MUST BE INCLUDED IN THE PROGRAM.
 - e. PLANNED ACTIVITIES FOR THE ENHANCEMENT OF STUDENT PERSONAL, CAREER AND LEADERSHIP SKILLS ARE TO BE INTEGRATED IN THE COURSE INSTRUCTION. ACTIVE SKILLSUSA-VICA AND/OR TSA PROGRAMS ARE RECOMMENDED TO HELP ACCOMPLISH THIS.
 - 1) SkillsUSA-VICA activities provide a quality education experience for students in leadership, teamwork, citizenship and character development. It builds and reinforces self-confidence, work attitudes and communication skills. It emphasizes total quality at work, high ethical standards, superior work skills, life-long education and pride in the dignity of work. SkillsUSA-VICA also promotes understanding of the free enterprise system and involvement in community service activities. (<http://www.skillsusa.org/>)
 - 2) The Technology Student Association (TSA) is the only student organization devoted exclusively to the needs of technology education students. Open to students who are enrolled in or who have completed technology education courses, TSA is composed of over 100,000 elementary, middle, and high school students in 2,000 schools spanning 47 states. TSA is supported by educators, parents, and business leaders who believe in the need for a technologically literate society. (<http://www.tsawww.org/>)
4. Facilities, Equipment and Resources
 - a. Space

Sufficient space must be provided for the organization of the laboratory in a manner consistent with the methods and techniques of the technology being taught, as well as sound educational and safety practices. Space requirements for new program facilities shall be designed

accordingly. Specific square footage requirements are not listed due to the many variables that effect planning. The following factors need to be considered in designing facilities.

- 1) Number of students to be accommodated
- 2) Equipment provided
- 3) Work stations provided
- 4) The need for ensuring student and instructor safety
- 5) The need for providing comfort and sanitation
- 6) The need for providing adequate storage facilities
- 7) The need for meeting building safety codes
- 8) Recognized standard for the technical program being organized
- 9) The need for accommodating both male and female students and those with special needs

b. Equipment – provisions shall be made:

- 1) to have equipment available which is comparable to that used in the technical area to be taught;
- 2) to maintain equipment in good, usable condition; and
- 3) to have adequate annual budget for the repair of equipment, for the replacement of equipment that becomes obsolete or worn, and for purchases of new types of equipment needed to keep instruction current.

5. Class Size

Determination of maximum class size for Industrial/Technology Programs must consider the following:

- a. Type of work being done
- b. Type of equipment being used
- c. Ease of supervision of the facility
- d. Available space
- e. Need for individual student instructions
- f. Available resources, supplies, materials, etc

Instructors should be current members of state and national professional organizations appropriate to the instructional fields in which they teach such as:

- Association for Career and Technical Education (ACTE)
- International Technology Association (ITEA)
- Montana Association of Career and Technical Education (MACTE)
- Montana Industrial Technology Education Association (MITEA)
- Technology Education Association of Montana (TEAM)

6. Teacher Certification and Qualifications – See General Requirements, Section A, Number 10

7. Gender Equity – See General Requirements, Section A, Number 14

8. Special Needs – See General Requirements, Section A, Number 14

PART V: SECONDARY COOPERATIVE WORK EXPERIENCE COMPONENT

Career and vocational/technical cooperative work experience programs must provide all students with on-the-job experience and training along with career and vocational/technical classroom instruction related to their occupational interests. A cooperative arrangement among the school, employer, and student is therefore necessary. Students' classroom activities and on-the-job experiences must be planned and supervised by the school and the employer to ensure that both activities contribute to the students' employability.

CAREERS TO BE SERVED

Programs at the secondary level may serve one or several of the job titles by classification of instructional program codes in the following areas:

- Agriculture Education
- Business and Marketing Education
- Health Occupations Education
- Trades and Industrial Education
- Family and Consumer Sciences Education
- Industrial Technology Education

REQUIREMENTS

1. Organization and Content

Programs must provide students with on-the-job or simulated experiences and training related to their career and vocational/technical program.

- a. A cooperative arrangement among the school, the employer and the student is necessary. Students' classroom and on-the-job activities must be coordinated and supervised by the school and the employer to ensure that activities contribute to the students' employability and total education.
- b. A signed training agreement must be entered into by the work experience coordinator, educational agency, parent or legal guardian and trainee with a copy maintained by the work experience coordinator for the duration of the work experience.
- c. Employers of students placed in cooperative work experience must adhere to state and federal labor laws.
- d. Students enrolled in a work experience career and vocational/technical education program shall receive credit for related classroom instruction and on-the-job training.
- e. A training plan must be developed for each student. The training plan will include a minimum of three objectives, a job description and a program of learning activities.
- f. The time requirement for students in work experience must be equivalent to the time requirement for credit to be earned.
- g. Budget items that may be considered as additional costs for funding purposes are noted in 10.41.101 (1)(a) through (1)(d).

2. Evaluation and supervision

Teacher coordination visits to training stations should be made at least once a semester per student for evaluation and supervision.

3. Teacher Certification and Qualifications

See General Requirements, Section A, Number 10

4. Time

The coordinator must be provided with coordination time over and above his or her regular preparation period(s). A minimum of one class period of coordination time per day or an equivalent of five class periods per week must be allotted for up to 30 cooperative students.

SECONDARY TRADE AND INDUSTRIAL EDUCATION PROGRAMS

VISION

Trade and Industrial Education envisions programs that train and provide society with a quality, skilled, world-class workforce.

MISSION

Trade and Industrial Education is committed to prepare all students for employment and life as productive citizens through developing attitudes and appreciations, technical, manipulative, and related academic skills, safety judgments, and work habits.

PART I: SCOPE

TRADE AND INDUSTRIAL EDUCATION PROGRAMS IN MONTANA'S SECONDARY SCHOOLS MUST BE DESIGNED TO PROVIDE STUDENTS IN GRADES 11 AND 12 WITH INITIAL SKILLS, KNOWLEDGE AND ATTITUDES TO ENTER INDUSTRIAL TRADE OR SERVICE OCCUPATIONS. Program completers should reach a level of skill attainment that provides minimum competencies for entry-level employment in a chosen occupation. However, to advance in the occupation, additional training will be necessary. Students should expect to participate in postsecondary career and technical education, on-the-job training, or supplemental study while employed.

Secondary trade and industrial education programs provide instruction in many aspects of a particular trade, but usually not in as much depth as postsecondary programs that enroll students for two or three times as many hours of instruction.

Included in curricular activities are experiences that develop manipulative skills and technical knowledge as well as help students attain related academic concepts, proper attitudes, trade judgment and personal traits needed for successful employment and further education.

PART II: OCCUPATIONS TO BE SERVED

The Classification of Instructional Programs (CIP), published by the U.S. Department of Education, are intended to establish standard terminology to improve the communication and exchange of information on instructional programs and to standardize record keeping.

Trade and industrial education at the secondary level may be offered according to a single Classification of Instructional Program (CIP) code.

More specific classification may be necessary (e.g., for follow-up purposes) using the following codes:

47.0603 Automotive Body Repair	48.0508 Welding
47.0604 Automotive Mechanics	47.0606 Small Engine Repair
47.0605 Diesel Mechanics Technology/ Technician	48.0999 Industrial Co-op Training
46.0201 Carpentry/Construction	09.07 Radio, Television, and Digital Communications
47.0101 Electricity/Electronics	15.13 Drafting, Design Engineering Technologies/Technician
48.05 Precision Metalworking	11.09 Computer Systems Networking and Telecommunications
10.03 Graphic Communications	

PART III: GENERAL REQUIREMENTS

In order to be approved for funding, programs must meet the following criteria in addition to the general career and technical education requirements as outlined in Part II of these guidelines (pages 3-5).

PART IV: PROGRAM INFORMATION

Funding will be generated for CIP code programs as per state formula.

1. Program Requirements

- a. THE PROGRAM SHOULD CONSIST OF A SEQUENCE OF COURSES THAT PROVIDE A MINIMUM OF 540 CLASS PERIODS OF INSTRUCTIONAL ACTIVITIES BEYOND THE INTRODUCTORY LEVEL.
- b. When properly organized, Industrial/Technology Education includes a progression of activities, which give students the initial awareness, orientation, and exploration of industry and culminates with specialization and preparation leading to employability.
- c. Industrial/Technology Education includes both prevocational programs and vocational programs. The portion of the program funded as Trade and Industrial Education is conducted at grades 10 and 12.
- d. A PREREQUISITE TECHNOLOGY EDUCATION PROGRAM OR OTHER PREVOCATIONAL COURSE(S) MAY PRECEDE THE TRADE AND INDUSTRIAL PROGRAM TO ALLOW STUDENTS TO EXPLORE SEVERAL SKILL AREAS WITHOUT COMMITMENT TO A SPECIFIC VOCATION. SUFFICIENT COUNSELING AND GUIDANCE, CAREER INFORMATION, AND EXPLORATION SHALL BE PROVIDED FOR ALL MALE AND FEMALE STUDENTS SO THAT WHEN THEY ENROLL IN A TRADE AND INDUSTRY PROGRAM THEY CAN BE CONSIDERED COMMITTED TO A CHOSEN CAREER AREA.

2. Organization and Content

- a. PROGRAM OBJECTIVES ARE TO BE WRITTEN IN A MEASURABLE PERFORMANCE OR BEHAVIORAL MANNER, AND MUST IDENTIFY SPECIFIC STUDENT OUTCOMES AND COMPETENCES TO BE MASTERED. COMPETENCIES ARE TO BE IDENTIFIED IN THE AREAS OF TECHNICAL SKILLS, KNOWLEDGE, AND PERSONAL ATTRIBUTES/WORK HABITS. Instruction should be individualized as much as is practicable. Recommended competency-based curriculum material endorsed by the Office of Public Instruction include those available from Mid-America Vocational Curriculum Consortium (MAVCC), the Oklahoma Curriculum and Industrial Materials Center (CIMC), Vocational-Technical Education Consortium of States (V-Techs), National Automotive Technicians Education Foundation (NATEF), Skills USA-VICA, and Automotive Youth Educational Systems (AYES).
- b. STUDENT COMPETENCY ACHIEVEMENT SHALL BE ASSESSED USING MEASURES BASED ON INDUSTRY STANDARDS. Recommended tests are available from the National Occupational Competency Testing Institute (NOCTI) and from the states of Ohio and Oklahoma, NATEF and AYES.
- c. THE CURRICULUM MUST INCLUDE ORGANIZED INSTRUCTIONAL UNITS IN THE APPLIED MATH, SCIENCE AND COMMUNICATION SKILLS RELATED TO THE OCCUPATIONAL AREA. EMPLOYABILITY SKILLS SHALL BE INCORPORATED INTO THE CURRICULUM. Resources that are recommended for teaching applied academics are Applied Math, Principles of Technology, Applied Communication and Workplace Readiness, all available through the Agency for Instructional Technology (AIT) or the Center for Occupational Research and Development (CORD).

- d. A PLANNED APPROACH TO DEVELOPING STUDENTS' PERSONAL ATTRIBUTES THAT LEAD TO JOB SUCCESS MUST BE PART OF THE INSTRUCTIONAL PROGRAM. EACH FUNDED PROGRAM SHOULD CONDUCT ACTIVITIES OF SKILLSUSA-VICA, OR Health Occupations Student Association (HOSA) AS AN INTEGRAL COMPONENT OF THE PROGRAM.
3. Facilities, Equipment and Resources
 - a. Space

There must be sufficient space provided for the organization of the laboratory or shop in a manner consistent with the methods and techniques used by modern industry or the trade, as well as sound educational and safety practices. Space requirements for new program facilities shall be designed accordingly. Specific square footage requirements are not listed due to the many variables that affect planning. The following factors need to be considered in designing facilities.

 - 1) number of students to be accommodated;
 - 2) equipment provided;
 - 3) work stations provided;
 - 4) the need for ensuring student and instructor safety;
 - 5) the need for providing comfort and sanitation;
 - 6) the need for providing adequate storage facilities;
 - 7) the need for meeting building safety codes;
 - 8) recognized standards of the trade, industrial or technical program being organized; and
 - 9) the need for accommodating both male and female student and those with special needs.
 - b. Equipment – provision shall be made:
 - 1) to have equipment available which will be comparable to that used in the occupation or trade to be taught;
 - 2) to maintain equipment in good, usable condition; and
 - 3) to have adequate annual budget for the repair of equipment, for the replacement of equipment, which becomes obsolete or worn, and for purchases of new types of equipment needed to keep instruction current.
 - c. Teaching Materials

Provisions shall be made to ensure that an adequate supply of materials is available not only for the manipulative activities, but also for the necessary related technical instruction. These materials include, but are not limited to:

 - 1) consumable pupil supplies;
 - 2) consumable teacher supplies;
 - 3) programmed instructional materials;
 - 4) text and reference books;
 - 5) audiovisual and other teaching aids;
 - 6) mockups and components; and
 - 7) computer hardware/software.

4. SkillsUSA-VICA

- a. SkillsUSA–VICA is a national organization serving trade, industrial, technical and health occupation students in high schools, vocational centers, area vocational schools and colleges.
 - 1) SkillsUSA–VICA activities provide a quality education experience for students in leadership, teamwork, citizenship and character development. It builds and reinforces self-confidence, work attitudes and communication skills. It emphasizes total quality at work: high ethical standards, superior work skills, life-long education, and pride in the dignity of work. SkillsUSA-VICA also promotes understanding of the free enterprise system and involvement in community service.
 - 2) The purpose of Trade and Industrial Education programs is to give the student necessary occupational skills to enter the labor market. Employers voice concern that these skills must include certain personal traits as well as manipulative skills and knowledge. SkillsUSA-VICA and Health Occupation Students of America association (HOSA) programs give the student an opportunity to develop full potential in self-development, citizenship, leadership and character. This can be accomplished when the program is conducted as a fully functional, integral part of the vocational education program.
 - 3) In addition to strengthening the instructional program, Career and Technical Student Organization (CTSO) activities help students strive for personal development. This is accomplished through student-initiated civic, educational, professional, and social activities supervised by the trade and industrial instructor and administered by public school officials. SkillsUSA-VICA activities also foster respect for the dignity of work, promote high standards of trade ethics, workmanship, safety, and develop patriotism through practice of democracy.
 - a) THE TRADE AND INDUSTRIAL EDUCATION TEACHER SHOULD SERVE AS AN ADVISOR TO THE LOCAL SKILLSUSA-VICA CHAPTER. ALL TRADE AND INDUSTRIAL EDUCATION PROGRAMS SHOULD MAINTAIN A LOCAL ACTIVE SKILLSUSA-VICA CHAPTER IN GOOD STANDING WITH THE STATE AND NATIONAL ORGANIZATIONS.
 - b) It is further recommended that SkillsUSA-VICA advisors be compensated for additional duties that may result from conducting an active student organization.

5. HOSA

- a. Health Occupations Students of America (HOSA) is a national vocational student organization endorsed by the U.S. Department of Education and the Health Occupations Education Division of the ACTE. HOSA's two-fold mission is to promote career opportunities in the health care industry and to enhance the delivery of quality health care to all people. HOSA's goal is to encourage all health occupations instructors and students to join and be actively involved in the HOE-HOSA Partnership.
 - 1) HOSA activities provide a unique program of leadership development, motivation, and recognition exclusively for secondary, postsecondary, adult, and collegiate students enrolled in health occupations education programs. HOSE is 100 percent health care! Membership in HOSA is restricted to health occupations students.
www.hosa.org.

6. Teacher Certification and Qualification

- a. See General Requirements, Section A., number 10
- b. Class 4 Career and Vocational/Technical License
(Contact Educator Licensure, Office of Public Instruction for requirements.)

7. Class Size

- a. Determination of maximum class size for Trade and Industrial Education Programs must consider the following:
 - 1) type of work being done;
 - 2) type of equipment being used;
 - 3) ease of supervision in the facility;
 - 4) safety factors;
 - 5) available space;
 - 6) need for individual student instructions; and
 - 7) available resources, supplies, materials, etc.
- b. Listed below are generally accepted maximum allowable class size:

Program	Generally Accepted Maximums
Auto Body	18
Auto Mechanics	18
Carpentry/Construction	16
Electricity/Electronics	20
Drafting	22
Graphic Arts	20
Metal Working	18
Welding	18
Small Engine Repair	20

PART V: SECONDARY COOPERATIVE WORK EXPERIENCE COMPONENT

Career and vocational/technical cooperative work experience programs must provide all students with on-the-job experience and training along with career and vocational/technical classroom instruction related to their occupational interests. A cooperative arrangement among the school, employer, and student is therefore necessary. Students' classroom activities and on-the-job experiences must be planned and supervised by the school and the employer to ensure that both activities contribute to the students' employability.

CAREERS TO BE SERVED

Programs at the secondary level may serve one or several of the job titles by classification of instructional program codes in the following areas:

- Agriculture Education
- Business and Marketing Education
- Health Occupations Education
- Trades and Industrial Education
- Family and Consumer Sciences Education
- Industrial Technology Education

REQUIREMENTS

1. Organization and Content

Programs must provide students with on-the-job or simulated experiences and training related to their career and vocational/technical program.

- a. A cooperative arrangement among the school, the employer and the student is necessary. Students' classroom and on-the-job activities must be coordinated and supervised by the school and the employer to ensure that activities contribute to the students' employability and total education.
- b. A signed training agreement must be entered into by the work experience coordinator, educational agency, parent or legal guardian and trainee with a copy maintained by the work experience coordinator for the duration of the work experience.
- c. Employers of students placed in cooperative work experience must adhere to state and federal labor laws.
- d. Students enrolled in a work experience career and vocational/technical education program shall receive credit for related classroom instruction and on-the-job training.
- e. A training plan must be developed for each student. The training plan will include a minimum of three objectives, a job description and a program of learning activities.
- f. The time requirement for students in work experience must be equivalent to the time requirement for credit to be earned.
- g. Budget items that may be considered as additional costs for funding purposes are noted in 10.41.101 (1)(a) through (1)(d).

2. Evaluation and supervision

Teacher coordination visits to training stations should be made at least once a semester per student for evaluation and supervision.

3. Teacher Certification and Qualifications

See General Requirements, Section A, Number 10

4. Time

The coordinator must be provided with coordination time over and above his or her regular preparation period(s). A minimum of one class period of coordination time per day or an equivalent of five class periods per week must be allotted for up to 30 cooperative students.

APPENDIX A

LOCAL CAREER AND VOCATIONAL/TECHNICAL ADVISORY COMMITTEES

SCOPE

PROGRAMS SHALL BE DEVELOPED AND CONDUCTED IN CONSULTATION WITH AN ADVISORY COUNCIL/COMMITTEE.

- A career and vocational/technical advisory committee must be approved (by the school board) for every career and vocational/technical program.
- The program advisory committee is required to meet at least once per year and minutes of all meetings must be on file.
- In schools where three or fewer career and vocational/technical programs are available, one general Advisory Committee with members who represent each program area may be utilized.

A Career and Vocational/Technical Education ADVISORY COMMITTEE IS A GROUP OF PERSONS, the majority of whom are outside the education profession, who are representative of the community and who are educated/trained/employed in careers related to the career and vocational/technical education programs, WHO ADVISE AND ASSIST DECISION MAKERS ON THE DESIGN AND MAINTENANCE OF RELEVANT CAREER AND VOCATIONAL/TECHNICAL EDUCATION PROGRAMS BASED ON THE ASSESSED NEEDS OF THE COMMUNITY, REGION, STATE, OR NATION. THE ADVISORY COMMITTEE'S PRIMARY FUNCTION IS TO PROVIDE INDUSTRY-SPECIFIC INFORMATION AND ASSISTANCE TO THE CAREER AND VOCATIONAL/TECHNICAL EDUCATION PROGRAM.

PURPOSE

General Functions The Advisory Committee is a mechanism for providing collective advice, recommendations, and service to the educational unit, its students, teachers, administrators, and other constituents.

The purpose and functions include advisement and assistance in the following:

- annual and long-range career and vocational/technical planning (projections for courses, enrollments, expenditures, etc.);
- curriculum content;
- equipment, facilities, and instructional resources;
- student recruitment, placement, and career guidance;
- community public relations;
- community resources (field trips, speakers, etc.);
- employment and community needs;
- program review and evaluation;
- professional development (teacher updating); and
- youth groups – Career and Technical Student Organizations (CTSOs).

Organization and Content Operation of both total program committee and individual program committees include the following components:

- Policies and procedures or bylaws should be developed locally. These should include the minimal procedures needed for efficient and effective committee operation.
- Officers should be lay people elected by the committee from the committee membership. The chairperson should work closely with the school, preside at meetings, appoint subcommittees and represent the committee to other groups. It is recommended that there be a chairperson, vice-chairperson, and secretary.

- Number of meetings should be determined locally, based upon necessity. It is recommended that quarterly meetings be held, and required that a minimum of one meeting per year be held.
- Agenda should be formulated and distributed to the membership and interested persons prior to the meetings. The agenda is the responsibility of the officers, the administrator responsible for career and vocational/technical education and the career and vocational/technical teacher.
- Minutes should be recorded for each meeting, distributed to the membership, filed in the administrative offices, and made available to the administration and the board.
- Committee reports should be kept, and the Advisory Committee should submit a brief annual report to the board stressing recommendations for improving the career and vocational/technical program. To maintain open communication in Advisory Committees, representatives should attend board meetings and vice versa.
- Committee goals and objectives should be developed by the Advisory Committee annually and reviewed periodically.

ADVISORY COMMITTEE MEMBERSHIP

Membership of the total program Advisory Committee and individual program Advisory Committees will vary in the scope of qualifications and number of people needed. Consideration of membership includes the following:

- Qualifications The Advisory Committee should include lay people from the community who possess expertise and work experience necessary to meet the purpose and to carry out the functions of the committee. Consideration should be given to recent graduates of programs as members, as well as a balance of employer and employees in the skill area.
- Selection Advisory Committee members should be appointed by the board from nominations made by the administration in consultation with the administrator responsible for career and vocational/technical education and the career and vocational/technical instructor. A balance of male/female, employer/employee shall be maintained where feasible.
- Number The size of the Advisory Committee must be determined locally. Consideration should be given to the function of the committee, size of career and vocational/technical program, and size of the community.
- Term A systematic procedure of replacement shall be established at the beginning of the school year. The membership terms should be staggered to allow for new members while retaining a one-third ratio of experienced representatives to help maintain continuity. A three-year membership term is recommended.

APPENDIX B

RELEVANT WEB SITES

Office of Public Instruction (OPI)

www.opi.state.mt.us

OPI – Career and Technical Education

www.opi.state.mt.us/CTE/Index.html

Office of Vocational and Adult Education (OVAE)

<http://www.ed.gov/offices/OVAE/index.html>

OVAE – Career Clusters

<http://www.ed.gov/offices/OVAE/clusters/index.html>

OVAE – CIP Codes

http://nces.ed.gov/pubs2002/2002165_3.pdf

OVAE – Tech Prep

<http://www.ed.gov/offices/OVAE/CTE/tphome.html>

Montana Tech Prep

<http://www.mttechprep.com/>

National Research Center for Career and Technical Education (University of Minnesota)

www.nccte.org

Association for Career and Technical Education (ACTE)

<http://www.acteonline.org/>

Montana Association for Career and Technical Education

<http://www.montanaacte.org/>

OPI