

DOCUMENT RESUME

ED 421 657

CE 076 924

TITLE Interactive Media Technologies. State Competency Profile.  
INSTITUTION Ohio State Univ., Columbus. Center on Education and Training  
for Employment.  
SPONS AGENCY Ohio State Dept. of Education, Columbus. Div. of Vocational  
and Career Education.; Ohio Board of Regents, Columbus.  
PUB DATE 1998-01-29  
NOTE 167p.  
PUB TYPE Guides - Classroom - Teacher (052)  
EDRS PRICE MF01/PC07 Plus Postage.  
DESCRIPTORS Associate Degrees; Business Administration; \*Competence;  
Competency Based Education; Employment Potential; High  
Schools; \*Interactive Video; \*Job Skills; \*Nonprint Media;  
Teaching Guides; \*Tech Prep; Technical Occupations;  
Telecommunications; Two Year Colleges; Vocational Education;  
\*World Wide Web  
IDENTIFIERS \*Ohio

ABSTRACT

This document contains 143 competencies, grouped into 25 units, for tech prep programs in the interactive media technologies cluster. The competencies were developed through collaboration of Ohio business, industry, and labor representatives and secondary and associate degree educators. The competencies are rated either "essential" (necessary to ensure minimal levels of employability by entry employees, must be included in all new tech prep programs), or "recommended." Competency builders are included for each competency. Some of the groups of competencies covered in the units include the following: employability skills; professionalism; teamwork; professional practices; workplace safety; project management; problem analysis; general administrative functions; economic and business principles; basic computer concepts and applications; customer relations; market research; business management; business law; writing; appreciation of the arts; programming; introduction to interactive media; graphic design fundamentals; photography; computer graphics, digital imaging, and animation; video and film production; audio production; web page design; and interactive media production. (KC)

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# Interactive Media Technologies

## State Competency Profile

January 29, 1998  
Lorain Community College

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## Interactive Media Technologies State Competency Profile

This document is the result of collaboration between a number of individuals and organizations. The Ohio Department of Education and the Ohio Board of Regents provided financial and staff support for the development of the document. Ms. Linda Fauber, Lakeland Tech Prep Consortium, coordinated the development of the initial document upon which the current document is based and drafted key units on interactive media technology. Guidance in document development was provided by a futuring panel composed of Ohio Business, Industry and Labor Representatives. (See attached list of Futuring Panel Members.)

The current document is a result of a review by a state panel of business/industry/labor representatives and secondary/associate degree educators on January 29, 1998. (The name and institutional affiliation of each panel member is provided on the following pages.) Jan Eley, Akron Area Tech Prep Consortium and Linda Fauber, Lakeland Tech Prep Consortium served as meeting facilitators. They were assisted by Julie Daugherty, Eastern Ohio Valley Tech Prep Consortium, Larry Casterline, Tech Prep Curriculum Services Consultant, and Erma Brobst, Tech Prep Curriculum Services.

As you review the document, keep in mind the following:

### *Essential Competencies*

Those competencies marked *Essential* in the State Competency Profile were determined by the statewide business/industry/labor panel to be necessary to ensure minimal levels of employability. Entry level employees should be able to perform this competency without supervision; therefore, students must be proficient in these competencies at least by the end of the Associate Degree.

*Essential* competencies must be included in all new Tech Prep programs. Tech Prep consortia with current programs in this area will be expected to phase-in essential competencies into their programs as well.

Wording of essential competencies may not be altered. The leveling may only be changed to deliver the competency earlier during the educational process. For example, the leveling of an

essential competency in the State Competency Profile may be altered locally from a P or Proficiency leveling at the end of the Associate Degree to a P or Proficiency by the end of the 12th grade. The reverse is not permissible. For example, a competency leveled P or Proficient by the end of the 12th grade in the State Competency Profile cannot be changed locally to a P or Proficiency by the end of the Associate Degree. For additional information on leveling of competencies, refer to the Leveling Code Sheet in your booklet.

Competency builders are intended to help define each competency; therefore, the builders may be modified as long as that modification does not change or dilute the intent of the State Panel.

Issues which arise regarding delivery of the *essential* competencies once the program is implemented will be addressed by a State review panel of business/industry/labor and education representatives with possible revisions to the State Competency Profile at a later date. Any issues identified during the local verification meeting should be conveyed to Tech Prep Curriculum Services by the consortium coordinator.

### ***Recommended Competencies***

The competencies marked *Recommended* are suggested additions to the State Competency Profile. Each of these competencies should be reviewed during a local competency profile meeting; with a joint panel of business/industry/labor and education representatives deciding whether to include each competency in the local curriculum. The decision should be based upon a consideration of local business needs, as well as priorities and time constraints of the educational process. Wording and leveling of all recommended competencies and builders may be modified.

### ***Additional Units/Competencies/Builders***

Competencies and/or builders may be added to any unit in the State Competency Profile. Additional units may also be added.

### ***Occupation Definitions***

Skills may be added to the occupational definitions based on the modifications made during the competency review. Because the definition is based on the skills detailed in the competency profile, only minor modifications should be necessary.

For additional information about this State Tech Prep Competency Profile contact:

Tech Prep Curriculum Services  
Center on Education and Training for Employment  
The Ohio State University  
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**Interactive Media Technologies Futuring Panel  
January 12, 1998  
Columbus, Ohio**

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# **Interactive Media Technologies State Competency Profile Meeting**

## **Business Participants**

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# Interactive Media Technologies State Competency Profile Meeting

## Educator Participants

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\*\*\*\*\*  
**LEVELING CODES**  
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**GRADE LEVEL**

12 = by the end of grade 12  
AD = by the end of the Associate Degree

**DEPTH**

I = Introduce (applies to at least three or 25% of the competency builders)  
R = Reinforce or add depth (after introducing or proficiency)  
P = Proficient (achievement of the competency **without** supervision)

**ACADEMIC CODES**

C = Communications related  
M = Mathematics related  
S = Science related

**OTHER**

WS = Worksite learning during the course of the Tech Prep program is recommended

**Example:**

P12, RAD, WS  
Competency: XXXXXXXX C

**Example:**

I-12, PAD  
Competency: YYYYYY  
Competency Builders:  
YYY  
XXX  
ZZZ M

# Interactive Media Specialist

An individual who applies various techniques to produce media for corporate video departments, educational institutions, and the information and entertainment industries. Technical skills should include, but not be limited to:

- television production
- computer graphics
- interactive media production
- graphic design
- recording
- digital imaging
- digital audio technology
- photography
- studio equipment maintenance
- web page design
- content research
- application design

# Tech Prep Interactive Media Technology State Competency Profile

## *Table of Contents*

<u>Unit</u>	<u>Page</u>
Employability Skills .....	1
Professionalism .....	11
Teamwork .....	21
Professional Practices .....	27
Workplace Safety .....	31
Project Management .....	34
Problem Analysis .....	39
General Administrative Functions .....	42
Economic and Business Principles .....	46
Basic Computer Concepts and Applications.....	57
Customer Relations.....	81
Market Research .....	85
Business Management .....	90
Business Law .....	103
Writing .....	107
Appreciation of the Arts.....	112
Programming.....	116
Introduction to Interactive Media .....	123
Graphic Design Fundamentals .....	127
Photography .....	132
Computer Graphics/Digital Imaging/Animation .....	134
Video/Film Production .....	150
Audio Production.....	159
Web Page Design.....	164
Interactive Media Production.....	175

# Unit: Employability Skills

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Develop a career plan

## Competency Builders:

Identify current interests and aptitudes

Identify common barriers to employment

Describe strategies to overcome employment barriers

Locate resources for finding employment

Research job trends

Identify career options

Identify advantages and disadvantages of career options (in addition to monetary).

Identify job requirements

Investigate education/training opportunities (including speaking with someone in the trade)

Evaluate personal strengths and weaknesses

Refine a written educational plan which leads to a specific career field

Create career passport

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Prepare for employment

**Competency Builders:**

Identify employment sources

Identify advantages and disadvantages of self-employment

Identify present and future employment opportunities (by geographic location)

Research job opportunities

Compare salary ranges and benefit packages

Compile occupational profile

Identify rights and responsibilities of equal employment opportunity laws

Demonstrate ability to accurately complete a job application

Design resume and cover letter

Target resume

Secure references

Investigate generic and specific employment tests (e.g., civil service exam; drug screening)

Use follow-up techniques to enhance employment potential

Demonstrate legible written communication skills using correct grammar, spelling, punctuation, and concise wording

Use proper diction in interviews

Describe methods for handling illegal questions on job application forms and during interviews

Write letter of application

Research prospective employer and services performed

Explain critical importance of personal appearance, hygiene, and demeanor

Interpret job description

Demonstrate appropriate interview question and answer techniques

Demonstrate methods for handling difficult interview questions using simulated role playing exercises

Describe procedures for following up after an interview

Evaluate job offers

Give notice to employer of job change

Write letter of acceptance

Write letter of declination

Demonstrate good listening skills

Ask for the job tactfully

Participate in extracurricular activities (e.g., student government, community projects)

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P		C

**Competency:** Evaluate the importance of self-esteem as an employability skill

**Competency Builders:**

Identify factors that affect self-esteem

Compare effects of low self-esteem and high self-esteem

Identify strategies to promote positive self-esteem

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency: Demonstrate job retention skills**

**Competency Builders:**

Identify employer expectations regarding job performance, work habits, attitudes, personal appearance, and hygiene

Exhibit appropriate work habits and attitude

Demonstrate ability to set priorities

Identify behaviors to establish successful working relationships

Identify alternatives for dealing with harassment, bias, and discrimination based on race, color, national origin, sex, religion, handicap, or age

Identify opportunities for advancement

List reasons for termination

List consequences of being absent frequently from job

List consequences of frequently arriving late for work

Demonstrate interpersonal relations skills (e.g., verbal and written)

Demonstrate negotiation skills

Demonstrate teamwork

Follow chain-of-command

Exhibit appropriate job dedication



**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency: Demonstrate knowledge of work ethic**

**Competency Builders:**

Define work ethic

Identify factors that influence work ethic

Differentiate law and ethics

Describe how personal values are reflected in work ethic

Describe how interactions in the workplace affect personal work ethic

Describe how life changes affect personal work ethic

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Exhibit appropriate work ethic

**Competency Builders:**

Use time-management techniques

Avoid personal activity during work hours

Attend work as scheduled

Adhere to company and/or governmental policies, procedures, rules, and regulations

Exercise confidentiality

Demonstrate appropriate human relations skills

Adhere to rules of conduct

Accept constructive criticism

Offer constructive criticism

Take pride in work

Resolve conflict

Manage stress

Avoid sexual connotations and harassment

Adjust to changes in the workplace

Demonstrate punctuality

Assume responsibility for personal decisions and actions

Take responsibility for assignments

Follow chain-of-command

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Apply decision-making techniques

**Competency Builders:**

Identify decision to be made

Identify possible alternatives and their consequences

Make decisions based on facts, legality, ethics, goals, and culture

Apply time factor(s)

Present decision to be implemented

Evaluate decision made

Take responsibility for decision

Identify ownership of decision to be made

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Apply problem-solving techniques

**Competency Builders:**

Identify problem

Select appropriate problem solving tools/techniques

Identify root problem cause(s)

Track root problem cause(s)

Identify possible solutions and their consequences (e.g., long term, short term, crisis)

Use resources to explore possible solutions to problem

Contrast advantages and disadvantages of each solution

Identify appropriate action

Evaluate results

Identify post-preventive action

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency: Exhibit characteristics for job advancement**

**Competency Builders:**

Display positive attitude

Demonstrate knowledge of position

Perform quality work

Adapt to changing situations and technology

Demonstrate capability/responsibility for different positions

Identify characteristics of effective leaders

Identify opportunities for leadership in work place/community

Demonstrate initiative to affect change in workplace

Participate in continuing education/training program

Respond appropriately to criticism from employer, supervisor,  
or other employees

Exhibit awareness of corporate culture

Prepare for job setbacks

Exhibit continual growth based on performance evaluation

Set realistic goals

# Unit: Professionalism

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Project professional image

## Competency Builders:

Define professionalism

Exhibit professional appearance

Exhibit professional manners

Project professional attitude

Identify individual's vital role in organization

Exhibit proper etiquette in professionally-related situations

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Formulate individual and professional goals

**Competency Builders:**

- Set flexible, realistic, and measurable goals
- Identify potential barriers to achieving goals
- Identify strategies for addressing barriers to goal achievement
- Breakdown long-term goals into short-term goals
- Prioritize goals
- Commit to goals
- Adjust goals
- Obtain support for goals
- Reward goal achievement

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	M

**Competency: Organize personal finances**

**Competency Builders:**

Explain need for personal management records

Balance checkbook

Identify tax obligations

Analyze how credit affects financial security

Compare types and methods of investments

Compare types and methods of borrowing

Compare types and methods of insurance

Compare types of retirement options/plans

Identify discretionary vs. non-discretionary expenditures



**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I		

**Competency:** Support community well-being

**Competency Builders:**

Identify environmental, educational, and social issues

Participate in social and/or community/industry activities

Participate in industry activities and organization

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Achieve organizational goals

**Competency Builders:**

Evaluate personal goals in relation to organizational goals

Monitor progress by evaluating feedback

List responsibilities in relation to organizational goals

Accomplish assigned tasks

Exercise responsibility in relation to organizational goals

Set appropriate personal performance standards

Communicate goals with supervisor and peers

Demonstrate knowledge of products and services

Promote organizational image and mission

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	C

**Competency: Demonstrate positive relations in the workplace**

**Competency Builders:**

Identify personality types

Identify methods of working with various personalities

Identify various management styles

Support organization expectations

Support organization decisions

Accept constructive criticism

Give constructive feedback

Adapt to changes in workplace

List factors to consider before resigning

Write letter of resignation

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency: Manage stressful situations**

**Competency Builders:**

Accept stress as part of daily life

Identify personal and professional factors contributing to stress

Describe physical and emotional responses to stress

Evaluate positive and negative effects of stress on productivity

Identify strategies for reducing stress

Identify positive methods to channel stress

Implement strategies to manage stress

Create strategies for developing and maintaining support systems

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Analyze effects of family on work and work on family

**Competency Builders:**

Identify how family values, goals, and priorities are reflected in work place

Identify responsibilities and rewards associated with paid and non-paid work

Identify responsibilities and rewards associated with families

Explain how family responsibilities can conflict with work

Explain how work can conflict with family responsibilities

Explain how work-related stress can affect families

Explain how family-related stress can affect work

Identify family support systems and resources

Identify work-related support systems and resources

Communicate with family regarding work

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Apply lifelong learning skills

**Competency Builders:**

Define lifelong learning

Identify factors that cause need for lifelong learning

Analyze effects of change

Identify reasons why goals change

Describe importance of flexibility and adaptability

Evaluate need for continuing education/training

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	C

**Competency: Manage professional development**

**Competency Builders:**

Identify career opportunities

Modify career plan

Participate in continuing education/training opportunities

Document continuing education/training

Read profession-related manuals, technical journals, and periodicals

Attend meetings, workshops, seminars, conferences, and demonstrations

Participate in professional organizations

Build personal/professional mentor relationship

Build personal/professional support system

Build professional network

Strengthen communication skills

Strengthen leadership skills

Strengthen management skills

# Unit: Teamwork

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Demonstrate knowledge of teamwork

## Competency Builders:

Define self-direction

Define responsibility

Define accountability

Differentiate work groups and teams (e.g., internal, external)

Identify conditions essential to teamwork (e.g., problem solving)

Explain influence of culture on teamwork (e.g., corporate, community)

Identify appropriate situations for using teams

Define team structures (e.g., cross functional, quality improvement, task force, quality circles)

Identify team building concepts

Describe characteristics and dynamics of teams

Identify characteristics of effective team leaders and members

Identify responsibilities of team members

Identify methods of involving each member of a team



Explain how individuals from various backgrounds contribute to work-related situations (e.g., technical training, cultural heritage)

Explain the purpose of facilitators

Define consensus

Define reward/recognition system

Define mutual respect

Define equality

Define "group think"

Provide feedback

Receive feedback

Define communication styles

Define management styles

Define social style

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Demonstrate teamwork

**Competency Builders:**

Identify purpose of team and intended goal (include time frames)

Structure team around purpose

Define responsibilities of team members (e.g., talents, skills, abilities)

Contribute to efficiency and success of team

Work toward individual and team milestones

Analyze results of team project

Facilitate a team meeting

Assist team member(s) with problem

Monitor time frame

Stress continuous improvement

Recognize failure as part of learning

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Use teamwork to solve problems

**Competency Builders:**

Identify appropriate situations for using teams

Identify quality management processes/techniques

Identify quality assurance processes/techniques

Prepare presentation (e.g., business plan & procedure)

Identify problem

Use problem-solving process in a team setting (e.g., Brainstorm, Pareto, Fishbone)

Identify resources

Gather data

Analyze data

Describe solution options

Implement solution options

Review solution

Review case studies

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Conduct team meetings

**Competency Builders:**

Plan agenda

Set ground rules

Schedule meeting and location

Set time limitations

Invite appropriate personnel

Set next team meeting

Solicit outside speakers as needed

Select scribe

Select meeting leader

Facilitate ground rules

Select facilitator

Invite questions and comments and group participation

Focus team on agenda items

Assign appropriate action, budget, time frame and  
accountability to tasks

Monitor time

Overcome team impasse

Close meeting on time

Publish minutes in timely manner

Avoid placing individual agendas above the group's agenda

# Unit: Professional Practices

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Explain professional responsibilities

## Competency Builders:

Explain the need for professional and ethical standards

Explain responsibility of the individual to apply ethical standards

Identify responsibility to client(s) and employer(s)

Explain consequences of unprofessional and/or unethical behavior

Explain importance of conflict resolution in the workplace

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency: Identify legal and ethical behavior**

**Competency Builders:**

Differentiate between legal and ethical behavior

Explain terms, principles, and characteristics of legal and ethical behavior (e.g., loyalty, discretion, solicitation, competitor, supplier)

Explain legal ramifications of breaching rules and regulations

Explain effects of unethical and/or unlawful behavior

Practice within scope of the profession

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Function as a self-managed employee

**Competency Builders:**

Propose project (C)

Organize tasks

Manage time

Meet deadlines

Maintain business records (C)

Make long-term and short-term plans

Evaluate progress

Report progress (C)

Delegate project

Acquire appropriate licenses/registrations

Obtain permits and releases



**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Follow intellectual property rights and copyright laws

**Competency Builders:**

Explain purpose of patent

Explain purpose of copyright

Explain purpose of licenses

Explain purpose of trademarks

Explain rights of the originator

Explain rights of the public

Define confidentiality

Define proprietary

Explain legal ownership of proprietary material

Describe stock image/text usage rights

Explain negotiation of contracts

Explain reproduction licensing and residual usage

# Unit: Workplace Safety

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C,S

**Competency:** Maintain safe working environment

## Competency Builders:

Describe what an MSDS sheet is

Comply with HMIS material safety data sheets (MSDS) and OSHA regulations

Comply with all MSDS regulations regarding hazardous materials

Maintain clean work area by removing waste, keeping alleyways clear, cleaning tools, and preventing spills

Minimize workplace causes of environmental burdening, pollutants, and poisoning

Describe pollution solution limits imposed by permits and regulations

Comply with regulatory guidelines in handling, labeling, and disposal of solutions (e.g., fountain chemicals, inks, wash-up solutions, drum grounding)

Identify visual equipment controls (e.g., monitors, read outs)

Identify auditory equipment controls

Comply with workplace safety rules and procedures

Comply with personal safety rules and procedures

Comply with applicable electrical, mechanical, hydraulic and  
pneumatic safety rules and procedures

Recycle appropriate materials

Use preventive maintenance checklists

Identify location of control panels, shut-off valves, and fire  
extinguishers

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
		I	

**Competency:** Demonstrate knowledge of ergonomics

**Competency Builders:**

Define ergonomics

Define risk factor

Define maximum permissible limit (MPL) and action limit (AL)  
for lifting

Define cumulative trauma disorder (CTD)

Identify susceptibility factors for CTD

Minimize extreme joint movement

Minimize use of excessive muscle/physical force

Minimize repetitive tasks

Minimize mechanical stresses (e.g., sharp edges, heat, cold, hard  
surfaces, weights, vibration)

Minimize awkward body positions

Explain use of rest pauses

Explain need for mats and footrest for standing jobs

Explain need for appropriate working heights of chairs, stools,  
workbenches, equipment

Explain need for adequate lighting

Explain use of anthropocentric design (e.g., centering one's view  
of everything around man)

# Unit: Project Management

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C,M

**Competency:** Explain project management

## Competency Builders:

Identify project purpose/goal

Identify project objectives

Identify work breakdown structure (WBS)

Identify resource requirements

Identify project economics/funding

Identify risks

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	M

**Competency: Plan projects**

**Competency Builders:**

Apply responsibility assignment matrix (RAM)

Apply Gantt or bar charts

Apply network diagrams

Apply critical path method (CPM)

Apply project education and review techniques (PERT)

Apply software programs

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C,M,S

**Competency:** Implement projects

**Competency Builders:**

Monitor project

Control project

Modify project

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Evaluate projects

**Competency Builders:**

Analyze performance

Perform critical review of project

Draw project management conclusions



**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	C

**Competency:** Write project summary

**Competency Builders:**

List project goals

Document project's key successes

Document project's key failures

Analyze costs vs. accomplishments

# Unit: Problem Analysis

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Appraise situations

## Competency Builders:

Identify concerns

Set priorities

Identify resolution process

Plan resolution

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	S

**Competency:** Analyze problems

**Competency Builders:**

Identify potential problems

Identify likely causes

Test for probable causes

Verify cause

Identify preventive actions

Identify contingent actions

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	S

**Competency:** Analyze decisions

**Competency Builders:**

Identify objective(s)

Identify alternatives

Evaluate alternatives

Assess risks

Make final choice

Determine effectiveness of decision

Document results

# Unit: General Administrative Functions

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Maintain work flow

## Competency Builders:

Organize work

Prioritize work

Apply time-management techniques

Complete assigned tasks in a timely manner

Coordinate with team members

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency: Perform telecommunications operations**

**Competency Builders:**

Display telephone etiquette

Operate equipment

Listen assertively

Verify information

Record messages

Place calls

Organize teleconferences

Use voice mail/messaging systems

Operate fax/modem machine

Use e-mail systems

Use Internet communications services

Use videoconference facilities

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency: Perform scheduling functions**

**Competency Builders:**

Create calendar/schedule

Maintain and use appointment calendars with accurate addresses  
and phone numbers

Process requests for appointments

Verify appointments

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency: Manage records**

**Competency Builders:**

Implement filing system

Implement retention system

Perform electronic filing operations

Maintain inventory records

Retrieve files



# Unit: Economic and Business Principles

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	M

**Competency:** Describe basic economic concepts

## Competency Builders:

Identify importance of economic resources

Explain concept of economic resources

Explain importance of economic resources

Explain concept of economic goods and services

Differentiate between economic goods and services

Differentiate between needs and wants

Explain concept of supply and demand

Explain concept of price

Explain how supply, demand, and price are related

Explain concept of private enterprise and business ownership

Explain concept of profit

Explain concept of risk

Explain concept of competition

Explain relationship among risk, competition, and profit

Describe global economic and world markets

Describe economic cycles (e.g., unemployment, recession, inflation, budget deficits)

Describe economic arena's effect on business (e.g., financial, competitor indicators, industry)

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Describe economic systems

**Competency Builders:**

Describe free enterprise system

Describe relationship between government and business

Describe relationship between labor and management

Compare types of economic systems

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	M

**Competency: Understand income statement data**

**Competency Builders:**

Identify revenue

Identify overhead expenses

Identify fixed expenses

Identify direct labor

Identify indirect labor

Identify direct and indirect materials

Identify general and administrative expenses

Identify selling expenses

Identify net income

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
		P	M

**Competency:** Explain equipment depreciation

**Competency Builders:**

Explain straight line

Explain sum of year's digits

Explain declining balance

Explain IRS strategies

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	M

**Competency: Identify cost and profit influences**

**Competency Builders:**

Explain importance of loss prevention

Explain importance of maximizing quality

Explain importance of maximizing productivity

Differentiate between specialized training and cross training

Explain labor, management, and government influences on cost/  
profit

Explain cost/profit influences of retraining

Define impact of seasonal business cycles

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	M

**Competency:** Describe economic indicators and trends

**Competency Builders:**

Define gross national product and gross domestic product

Define national debt

Define impact of interest rates

Define impact of government spending

Define impact of seasonal business cycles

Define impact of inflation, growth, recession, and  
unemployment

Define impact of national and world events

Define impact of the growth of international trade

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	M

**Competency:** Explain international trade

**Competency Builders:**

Describe nature and importance of international trade

Explain marketing in international trade

Explain balance of trade concepts

Describe impact of foreign investment

Describe the influence of national debt

Describe the effect of currency exchange rates on international trade



**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency: Explain basic business concepts**

**Competency Builders:**

Identify functions of business

Explain role of management

Explain role of labor

Explain concept of service as a product

Explain role of administration

Explain role of operations

Identify role of company objectives

Identify importance of ethical business practices

Identify types of ownership

Identify components of a business plan

Calculate break even and payback

Explain role of depreciation in business decisions

Explain role of capital gains

Describe business reporting and information flow

Map interface of departmental functions

Describe business communication channels (e.g., formal, informal)

Explain basic total quality management (TQM/ISO) principles

Explain the effects of bankruptcy

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency: Explain legal concepts**

**Competency Builders:**

Define legal terminology

Explain business law concepts

Identify contracts and/or legal documents

Explain relationship of laws and regulations to company  
contracts, policies, and procedures

Identify laws relating to working conditions, wages and hours,  
civil rights, social security, disability, unemployment  
insurance, and exempt vs. nonexempt

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency: Explain role of marketing**

**Competency Builders:**

Identify aspects of sound business image

Explain purposes of marketing

Describe functions of marketing

Describe effects of marketing

Identify target markets

Define sales potential

Explain pricing strategies

Differentiate among advertising campaigns

Explain functions of advertising agencies

Describe sales incentive programs

Differentiate among types of marketing strategies (e.g., phone, mail, person)

# Unit: Basic Computer Concepts and Applications

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Describe personal computer operations

## Competency Builders:

Explain how data is stored in main computer memory

Explain how computer system executes program instruction

Explain computer storage capacity

Explain how data is represented

Describe data storage devices

Identify types of memory

Describe back-up and archival disciplines

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency: Explain information processing cycle**

**Competency Builders:**

Describe computer languages and their use (e.g., machine, postscript, proprietary, graphic description)

Describe difference between data files and program files

Explain PC/Mac layout

Explain PC/Mac network layout

Explain mini/mainframe network layout

Differentiate among hardware, software, and firmware

Differentiate between open from proprietary architecture

Explain upload/download

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Explain operating systems

**Competency Builders:**

Identify operating systems and their attributes (e.g., DOS, Unix, Macintosh, Windows)

Describe compatibility issues

Identify cross-platform file conversion tools

Describe how commands handle tasks in operating systems

Describe various input/output systems

Describe the purpose of operating system utilities

Differentiate between a compiler and an interpreter

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency: Demonstrate basic computer literacy**

**Competency Builders:**

Create directories/folders and sub-directories

Format disks

Manipulate files (e.g., copy, rename, delete)

Keyboard proficiently by touch

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency: Operate computer hardware**

**Competency Builders:**

Practice proper media handling techniques (e.g., magnetic fields, dust, liquids)

Identify hardware and its use

Use hardware (e.g., printers, modems, touch screen, digitizers, plotters, graphic tablets, scanners, film recorders, video, laser image setters)

Demonstrate basic care of hardware

Explain need for and application of security levels/procedures

Perform basic hardware troubleshooting

Explain hardware addressing techniques

Maintain usage and maintenance logs



**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Explain operation of peripheral devices

**Competency Builders:**

Identify peripherals and operating requirements of each

Identify primary devices used for personal computer auxiliary storage

Describe how data is stored on diskettes and hard drives

List speed and storage capacities of computer auxiliary storage devices

Describe attributes of diskettes and hard disks regarding speed and storage capacity

List types of disk storage used with large computer systems

Define role of tape storage in relation to personal and large computers

Describe security issues

Explain purpose of input devices (e.g., keyboard, mouse, scanners, pens, bar code readers, credit/debit/smart cards, voice, video, gloves)

Describe operation of output devices (e.g., voice, speaker output devices, printers, plotters, printer sharing units, SCSI interface, video display)

Describe operation of multimedia (e.g., video, audiosound)  
Describe operation of storage devices (e.g., tape, disk,  
CD-ROM)

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency: Operate peripheral devices**

**Competency Builders:**

- Use appropriate reference materials
- Load media devices
- Start media devices
- Unload media devices
- Import, edit, and export video and audio
- Set up print devices
- Operate scanner devices
- Operate print devices
- Maintain print devices
- Monitor peripheral equipment operations
- Perform routine maintenance on peripheral devices
- List appropriate control procedures
- Transmit via modem
- Receive via modem
- Search a CD-ROM library
- Print information from a CD-ROM library
- Describe device driver

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency: Store media**

**Competency Builders:**

Identify need for data library

Retrieve stored media (e.g., on-line, off-line, permanent, off-site)

File stored media (e.g., on-line, off-line, permanent, off-site)

Initialize media

Catalog media

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency: Explain software applications**

**Competency Builders:**

Define software types and functions

Describe need for application software

Describe different types of software applications

Explain advantages and disadvantages of integrated and  
dedicated software

List software sources

Explain software copyright laws

Explain data compression techniques

Explain use of passwords/security

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Use word processing packages

**Competency Builders:**

Define word processing terminology

Explain functions of word processing software

Explain word processing applications

Use appropriate reference materials

Keyboard efficiently by touch

Use mouse

Initialize diskette

Prepare backup file

Maintain backup file

Update spelling dictionary and spell check

Perform document functions (e.g., locate, rename, delete, save, retrieve, copy)

Perform formatting functions (e.g., center, underline, bold, cut and paste)

Use edit features

Use sort features

Add page numbers to document

Add headers and footers

Print files, pages, screens and blocks of text  
Verify accuracy of output  
Create a document  
Save a document to disk  
Retrieve a document from disk  
Edit an existing document  
Describe word-wrap  
Print a document  
Store boilerplate material (e.g., templates, stationary files)  
Compose documents at keyboard  
Tabulate multiple columns  
Prepare new documents from existing ones  
Merge selected copy with new information  
Prepare various types of table options  
Format text  
Integrate database, spreadsheet and graphic files  
Convert documents from one system to another  
Demonstrate use of computer thesaurus  
Use multimedia techniques/resources  
Perform merge functions

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	M

**Competency:** Use spreadsheet packages

**Competency Builders:**

Define spreadsheet

Demonstrate knowledge of basic spreadsheet terminology

Define components of spreadsheets

Describe implementation of spreadsheet operations in business scope

Use spell check

Execute an electronic spreadsheet

Enter data, formulas, and functions

Differentiate between labels and numbers

Speculate using "what if..." questions

Sequence keystrokes in the creation of a macro

Create database within spreadsheet and perform data query functions

Move around in spreadsheet and correct errors

Format spreadsheet

Create graphs

Print graphs

Save previously saved files



Load previously saved files

Replicate cells using copy commands

Use electronic spreadsheet to complete business application

Use spreadsheet to plan financial strategies

Prepare spreadsheet

Use multimedia techniques/resources

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Use databases

**Competency Builders:**

Define database

Explain terms used in database systems

Describe common functions of database systems

Use database to create, input, edit, and display fields and records

Analyze structure of database files

Perform calculations with a database file

Alter structure of database file

Sort records based on multiple fields

Identify advanced database technology

Use appropriate reference materials

Utilize relational database

Enter elements into database

Proofread database

Explain database

Design report formats

Transfer data to and from remote database

Print reports using data from multiple databases

Use database files with other application software  
Verify accuracy of output (e.g., edit reports)

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency: Use graphic user interface (GUI) techniques**

**Competency Builders:**

Describe a variety of computer interfaces

Explain multi-tasking environment

Setup data exchange between two different applications

Setup an object link between two different applications

Explain the use of dynamic link libraries

Transfer data from instruments to other computers

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Manage software packages

**Competency Builders:**

Install software packages

Upgrade software packages

Document installation and upgrade of software packages

Apply security levels/procedures to sensitive data

Understand software memory allocation

Manage software preferences

Manage software conflicts

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Maintain computer security requirements

**Competency Builders:**

Apply business ethics

Follow security rules, regulations, and codes

Implement security procedures

Document security procedures

Perform security checks

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Maintain personal computer systems

**Competency Builders:**

- Monitor system status and performance
- Run diagnostics
- Report computer system malfunction(s)
- Report software malfunction(s)
- Fix recoverable files
- Maintain security
- Maintain computer log
- Perform backup procedure(s)
- Perform preventive maintenance
- Follow log-off and power-down procedure(s)
- Follow equipment maintenance procedures
- Follow quality control procedures

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency: Demonstrate basic knowledge of networks**

**Competency Builders:**

Explain communications standards

Describe network structures

Explain network types and protocols

Explain network connectivity

Explain the function of servers in a graphic network

Describe various network operating systems

Explain the difference between network software and individual use software

Use a network to access, file, and store files



**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Use a shared environment

**Competency Builders:**

List purposes of a network environment

Define electronic mail

Identify advantages and disadvantages of electronic mail

Describe impact of local & wide area networks on mail delivery

Compose electronic messages

Send electronic messages using appropriate format

List categories of electronic mail service

Transmit document using electronic mail system

Monitor electronic mail

Use networked environments

Search database for properties of materials

Conduct literature searches using a variety of on-line tools

Explain access, security, transmission and retrieval

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency: Demonstrate knowledge of the Internet**

**Competency Builders:**

Define the Internet

Explain how the Internet works

Explain Internet capabilities and limitations

Explain how to connect to the Internet via modem, ISDN, etc.

Install Internet software

Navigate the World Wide Web

Identify services and tools offered on the Internet

Use services and tools offered on the Internet

Explain bookmarks

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency: Use the Internet for research**

**Competency Builders:**

Define how the Internet can be used for research

Use services and tools offered on the Internet for research

Identify search engines

Use search engines

Evaluate Internet resources and accuracy of information

Access library catalogs on the Internet

Access commercial and government resources

Download files

# Unit: Customer Relations

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Demonstrate positive relations with customer(s)

## Competency Builders:

Identify importance of customers to business

Differentiate between customer needs and wants

Explain principles of customer service

Provide prompt and courteous service

Resolve customer inquiries and complaints and/or refer customer to appropriate person

Identify methods of addressing dissatisfied customer(s)

Develop rapport with customer(s)

Identify opportunities to provide additional services to customer(s)

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Meet customer needs and expectations

**Competency Builders:**

Clarify job requirements with customer(s)

Prepare quote/estimate

Create job files

Serve as liaison between customer(s) and technical staff

Define appropriate production procedures and processes

Explain company services, equipment capabilities, limitations, and workflow

Evaluate project

Provide feedback to customer(s)

Differentiate between preliminary proof and contract proof

Obtain customer(s) approval for all proofs at appropriate stages in the production process

Document job information (e.g., work orders, quotes, job tickets)

Notify customer of changes in schedule and costs

Manage scheduling conflicts in schedule

Develop continuous customer satisfaction feedback

Use negotiation skills to resolve conflicts with customers

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Manage project budget and timeline

**Competency Builders:**

Document customer(s)-requested changes

Communicate impact of requested changes on budget and  
timeline to customer(s)

Advise customer(s) of alternative production techniques

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Target account opportunities

**Competency Builders:**

Research the customer

Determine needs through effective questioning

Access right information

Sell benefits of product/service

Draw up sales contract

Resolve mistakes, misunderstandings, and author changes

Set deadlines

# Unit: Market Research

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	C,M

**Competency:** Describe market research

## Competency Builders:

Describe market research as both a formal and informal process

Identify common market research activities and the type of information each provides

Differentiate between primary and secondary sources of market research information

Differentiate between qualitative and quantitative sources of market research information

Match primary and secondary sources with their advantages and disadvantages

Explain factors limiting market research (e.g., objectives, level of commitment, resources available)

Identify the steps of market research



**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	C

**Competency:** Use the steps of market research

**Competency Builders:**

Identify market research objectives

Identify limiting factors

Identify sources of information (e.g., primary, secondary, qualitative, quantitative)

Record appropriate data classifications

Evaluate statistical market potential

Evaluate non-statistical market potential

Rank the most promising potential markets

Conduct in-depth research

Conduct product/company specific research

Recommend target markets

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Describe considerations for specific research

**Competency Builders:**

Identify and assess markets according to current and projected demand for like or similar goods or services

Identify and assess factors that could affect the sales potential of the market

Identify channels of distribution for the target market, including availability of methods and channels

Identify competitors in the target market

Identify potential barriers to profitable sales in the target market

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
		I	M

**Competency:** Explain the use of market research tools

**Competency Builders:**

Explain the basics of sampling

Differentiate among stratified, cluster, systematic, area, and random-digit sampling

Explain attitude measurement

Differentiate data among surveys and questionnaires completed over the telephone, by mail, and in person

Explain the purpose of experiments

Explain the purpose of observations

Differentiate internal from external research and the advantages and disadvantages of each

Identify errors in market research

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	R	M

**Competency: Perform the research process**

**Competency Builders:**

Identify the need for information

Identify research objectives

Identify data sources

Identify or develop data collection forms

Design the sample

Collect data

Process data

Analyze data

Present results

# Unit: Business Management

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency: Explain entrepreneurship**

## Competency Builders:

Identify characteristics of entrepreneurs

Identify qualities and skills needed by business owners

Identify means of obtaining technical assistance

Identify advantages and disadvantages of owning a business

Identify personal risks of owning a business

Describe basic factors contributing to business success

Describe a franchise-dealer relationship

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency: Evaluate entrepreneurship as a personal or corporate goal**

**Competency Builders:**

Evaluate personal interests and resources (e.g., time, energy, skills)

Compare personal interests and skills with those necessary for entrepreneurship

Assess aptitude to become a successful entrepreneur

Identify motives for becoming an entrepreneur

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	C

**Competency:        Develop a business plan**

**Competency Builders:**

List sources of information for starting a business

Classify local and state requirements for starting business

Identify risks of creating a new business

Differentiate among market characteristics

Analyze financing of business ownership

Develop marketing strategies

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency: Identify role of small business in the economy**

**Competency Builders:**

Identify factors that contribute to the success and failure of small business

Describe effects of supply, demand, profit, and competition on small business

Explain relationship of small business to a national (USA) and global economy



**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Analyze how legislation affects business

**Competency Builders:**

Identify legal issues faced by entrepreneurs

Describe the relationship between government and entrepreneurs

Explain the effects of regulation on the business operation

Identify when and how to obtain appropriate legal assistance

Participate in the legislative process

Utilize trade association resources

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Evaluate factors affecting business management

**Competency Builders:**

Identify advantages and disadvantage of various types of ownership

Identify cooperative arrangements

Describe legal forms of retail businesses

Differentiate between various types of insuperable business risks

Describe social and ethical problems that affect business

Classify types of government regulations that affect business

Analyze current trends in business

List costs that must be considered when starting a business

Select best location and layout for a business

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency: Identify marketing mix**

**Competency Builders:**

Explain importance of having the right product

Explain importance of having the product at the right place

Explain importance of having the product with the right  
promotion

Explain importance of having the product at the right price

Explain importance of having the product at the right time

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	C

**Competency: Promote products and/or services**

**Competency Builders:**

Explain selling function

Explain promotion function

Describe relationship of sales to promotion

Describe how to plan for special events and public relations activities

Explain importance of maintaining a check on competitors' promotions

Identify factors used to select appropriate products

Prepare merchandise/buying plan

Maintain vendor information and select appropriate vendors

Identify selling price (M)

Keep abreast of merchandising trends

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency: Manage customer relations**

**Competency Builders:**

Identify advantages of customer services and accommodations

Identify advantages of attractive, comfortable facilities

Explain importance of price, quality, and variety

Use acceptable techniques in handling customer complaints

Develop customer audit

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	M

**Competency:** Explain financing methodologies

**Competency Builders:**

Explain leasing

Explain stock ownership

Explain bond ownership

Explain convertible securities

Explain bank loans

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
		P	M

**Competency: Identify costs of financial services**

**Competency Builders:**

Classify revenue and expenses

Speculate on revenue sources and expenses

Identify start-up costs

Explain means of obtaining financial assistance

Explain importance of a sound credit rating

Outline long-range financial plans

Explain how sources of finance are used in business operations

Compare financial services available from financial institutions

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
		P	M

**Competency: Prepare financial records and reports**

**Competency Builders:**

Record receipts and payments

Adjust cash flow upon the introduction of a variable

Justify budget items

Record income and expenditures

Report employee records for audit and taxation purposes



**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
		P	

**Competency:** Comply with government regulations

**Competency Builders:**

Identify sources of information and assistance

Identify regulations, licensing, and permits affecting business operations

Identify taxes affecting businesses

Develop policies of compliance

Develop emergency procedures

Monitor changing regulations

# Unit: Business Law

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	C

**Competency:** Demonstrate knowledge of labor law

## Competency Builders:

Describe rights and responsibilities of parties to an employment contract

Identify state and federal laws dealing with employment

Identify protections available to employees

Identify issues related to casual contract labor

Identify issues related to hiring union employees

Identify relevant worker's compensation issues

Describe the role of OSHA

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Demonstrate knowledge of contract law

**Competency Builders:**

Analyze elements of a contract

Differentiate between contracts that are transferable and  
contracts that are not transferable

Identify means of discharging contracts

Describe means of discharging contracts

Describe remedies available for a breach of contract

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	C

**Competency: Demonstrate knowledge of corporation law**

**Competency Builders:**

Explain the different types of business structures (e.g., sole proprietorship, general partnership, limited partnership, corporation including subchapter S)

Describe how to form a corporation

Describe the difference between equity and debt securities

Identify the principle/agent relationship and the basic terms of employment agreements

Identify special forms of corporations

Name corporation purpose and structure

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency: Demonstrate knowledge of intellectual property rights and multimedia law**

**Competency Builders:**

Explain the various forms of intellectual property rights (e.g., copyright, patent, trademark, trade secrets)

Explain how to obtain a copyright

Explain how to obtain a patent

Explain how to obtain a trademark

Explain the perils in acquiring content rights

Define the rights granted under copyright, patent, and trademark

Identify the implications related to electronic imagery

Define authorship

Explain work made for hire

Explain fair use

Explain court cases related to intellectual property rights

Explain First Amendment rights

# Unit: Writing

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency: Develop basic technical materials**

## Competency Builders:

- Identify need for publication(s)
- Define audience(s)
- Define objective(s)
- Define topic(s)
- Develop time frame for project development
- Locate sources of information
- Interpret information
- Review existing literature
- Compile appropriate data (M)
- Develop draft
- Revise/edit draft
- Apply rules of grammar and word usage
- Write coherent sentences and paragraphs
- Spell words correctly
- Proofread
- Group information

Prepare and revise outline(s)  
Use word processing system  
Define terminology  
Match vocabulary to targeted audience  
Explain ramifications of language translation  
Specify type and style for illustration(s)  
Prepare sketches, if applicable (M, C)  
Write figures titles and photograph captions  
Prepare tables and charts (M, C)

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Edit basic technical material

**Competency Builders:**

Evaluate material for readability and correctness

Validate data (M, S)

Validate data in illustrations (M)

Edit illustrations

Seek evaluation of suggested changes



**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Use creative writing skills to write fiction

**Competency Builders:**

Explain the major components of a fictional story (e.g., theme, style, setting, plot, character)

Discuss the use of literary devices

Evaluate writings of established authors

Write a short story

Explain the importance of revisions

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	C

**Competency:** Use creative writing skills to write a script

**Competency Builders:**

Explain the various script formats (Hollywood and Standard AV)

Determine audience

Determine objectives

Analyze project outline

Write a video treatment/synopsis to coincide with project outline

Develop a storyboard

Develop a master scene script with detailed account of each screen with characters and their dialogue

# Unit: Appreciation of the Arts

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Demonstrate an appreciation and basic knowledge of music

## Competency Builders:

Explain how musical elements relate to the meaning or content of a composition

Explain the feelings conveyed by various musical elements (e.g., thematic construction, tonal color, instruments, texture, volume, tempo)

Explain the role of music in different historical periods

Explain the role of music in contemporary living

Explain the function of music in different cultures

Identify the basic physical properties of sound (e.g., pitch, intensity, duration, and timbre)

Explain the various elements of music (e.g., rhythm, melody, harmony, tone, color, and form)

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency: Demonstrate an appreciation and basic knowledge of visual art**

**Competency Builders:**

Contrast the visual art styles of various historical periods

Define various forms of visual art

Explain the various elements of visual arts (e.g., lines, colors, light and dark, texture, volume, perspective)

Explain the feelings conveyed by various elements of visual arts

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Explain the interaction of music and visual art

**Competency Builders:**

Define music visualization

Explain how to combine music and visuals to evoke emotional responses

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency: Demonstrate an understanding and appreciation of literature**

**Competency Builders:**

Explain the basic themes used in literature

Identify the basic styles/genres of literature

Identify the basic elements of a story (e.g., plot, characters, setting)

Discuss the use of various themes and styles in interactive stories

# Unit: Programming

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Explain computer applications

## Competency Builders:

Explain hardware component functions

Describe major types of software and their functions

Describe batch processing

Describe interactive processing

Describe event driven, object oriented processing

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Prepare to write computer applications

**Competency Builders:**

Use appropriate reference materials

Analyze specifications

Identify constraints

Identify programming language

Identify input and output (I/O) requirements

Prepare logic using program-flow diagram



**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Explain programming theory

**Competency Builders:**

Explain the meaning of “reserved word”

Describe arrays and tables (M)

Explain compilers

Differentiate between system documentation and user documentation

Describe what is mean by top-down design and structured programming

Identify the steps in the program development cycle

Identify the steps and procedures required to develop test data

Explain iteration (looping)

Describe what is meant by data validation

List rules for naming variables

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Apply programming theory

**Competency Builders:**

Demonstrate use of variables

Write source code per standards

Use spacing charts to plan program output

Code a modular program

Interpret a simple pseudocode design

Create a flow-chart

Utilize program sorts

Demonstrate use of loops

Demonstrate use of logical operators (e.g., AND, OR, NOT)

Code error-handling techniques

Demonstrate use of data files

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Write a computer program

**Competency Builders:**

Follow algorithm to produce desired output (M)

Use variables (M)

Write sub-routines

Use conditional statements

Use functions, including library, user-defined, and string functions

Write arithmetic statements (M)

Write IO statements

Write internal documentation

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency: Test programs**

**Competency Builders:**

Use debugging statements and tools

Debug syntax errors

Create test data that checks logic and error routines

Execute program with test data

Correct logic errors

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency: Demonstrate knowledge of authoring software for multimedia projects**

**Competency Builders:**

Compare the advantages and disadvantages of various authoring software packages

Choose the most appropriate authoring software for the project

Author a program using authoring software

Use programming knowledge to solve authoring problems

# Unit: Introduction to Interactive Media

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Demonstrate a basic knowledge of interactive media

## Competency Builders:

Define interactive media

Identify major characteristics of interactive media presentations

Describe the important historical developments leading to contemporary interactive media

Describe various interactive media industry genres

Perform critical review of various interactive media end products

Identify rights, responsibilities and controls of various media

Interpret intellectual property laws involving interactive media

Explain the social and cultural implications of interactive media

Explain key criticisms of interactive media

Identify future trends in interactive media

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Explain the markets for interactive media

**Competency Builders:**

Explain the concepts and uses of interactive media in sales and marketing

Explain the concepts and uses of interactive media in interactive advertising

Explain the concepts and uses of interactive media in K-12 education

Explain the concepts and uses of interactive media in corporate training

Explain the concepts and uses of interactive media in corporate communications

Explain the concepts and uses of interactive media in news

Explain the concepts and uses of interactive media in entertainment

Explain the concepts and uses of interactive media in distance learning

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Execute pre-production, production, and post-production tasks for the area of gripping

**Competency Builders:**

Formulate strategies to properly utilize grip equipment during film/video production

Originate solutions to unique shooting problems

Organize pre and post-production routines

Analyze production requirements to determine grip equipment needs

Create required effects for lighting set-ups

Demonstrate safe work habits

Work as a member of a film production team



**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Execute pre-production, production, and post-production tasks for the area of camera

**Competency Builders:**

Analyze the aesthetic needs of a shot and accomplish them

Organize the proper care and handling of camera and camera assist equipment

Analyze the script for camera lens and shot requirements

Organize pre and post-production routines for film camera operation

Analyze production requirements to determine camera equipment needs

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency: Perform lighting activities for a video production**

**Competency Builders:**

Describe types of lighting fixtures

Identify parts of lighting fixtures

Distinguish various applications of stage lighting equipment

Design a standard lighting plot

Analyze and document lighting requirements for production

Set up appropriate lighting for a production

Describe functions of master lighting panel and dimmer board

Operate master lighting panel to dimmer board

Appraise maintenance needs for lighting equipment

Design special effects lighting

**BIL:** Recommended

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Design scenery to the specifications required in a video production

**Competency Builders:**

Design scenic plans to scale

Interpret scenic plans for the appropriate use of materials and hardware for scenic construction

Formulate design strategies for the construction of scenery

Create special effects scenery

Organize transportation of scenery to remote locations

Inspect and repair scenery as needed

Select and arrange stage props

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency: Operate video camera**

**Competency Builders:**

Tape under tungsten conditions

Tape under daylight conditions

Tape under backlight conditions

Tape while panning

Tape while zooming

Tape while tilting

Tape while simultaneously panning, tilting, and zooming with camera mounted on a tripod

Tape while simultaneously panning, tilting, and zooming using a hand-held camera

Play back tape on monitor

Identify the effect on a video camera of changing of setting in low light levels

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency: Identify video formats**

**Competency Builders:**

Differentiate among consumer, industrial, and broadcast grade video cameras

Describe camera formats

Differentiate among Betacam, VHS, 8mm, super VHS, and DV-Cam

Differentiate frame vs field modes

Identify image characteristics affected by camera choice

Differentiate among NTSC, PAL, and RGB video signals

Explain relationship of chip size to image size on film

Explain frame synchronization and time base correction

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency: Perform editing operations**

**Competency Builders:**

Describe operational parts of a video cassette editor

Explain linear vs nonlinear editing systems

Set up video cassette editor

Perform assemble edits

Perform insert edits

Edit using dissolves (A-B roll)

Add sound track

Add narration/voice over

Explain edit decision lists

Use edit decision lists

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Digitize video

**Competency Builders:**

Explain the concept of digitized video

Explain digital video bandwidths and their implications

Use a video capture card and appropriate software to digitize video tapes

Edit digitized video (including transitions, special effects, computerized backgrounds)

Explain the compression of video files

Explain batch capture process

Use batch capture process

# Unit: Audio Production

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	C,S,M

**Competency:** Demonstrate a knowledge of audio recording and sound reinforcement

## Competency Builders:

Identify generally used instruments in modern pop-related recording

Describe basic acoustic principles and formulae

Explain the function and design of microphones

Use microphones effectively

Diagram signal flow throughout the recording chain

Use a mixing console with solid understanding of its input and output functions

Explain the properties of magnetic tape and the tape recorder

Edit tape recordings

Explain properties of analog and digital tape recording

Explain methods of analog and digital editing

Use editors effectively

Explain sound reinforcement techniques for live programs

Explain methods for mastering audio recordings



Produce master product as an audio tape product  
Produce master product as a compact disc or DVD  
Explain future technologies for audio recording  
Explain analog signal processing and its applications  
Explain digital signal processing and its applications  
Explain digital audio bandwidths and their implications  
Explain various computer hardware and software used in studio  
recording  
Critique recordings

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency: Demonstrate a basic knowledge of digital audio production**

**Competency Builders:**

Identify current trends in electronic music

Explain MIDI

Explain digital synthesis

Identify computer music applications

Explain compression of sound files

Explain digital sampling

Identify potential markets for use of electronic music

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	C,S

**Competency:** Create a sound track

**Competency Builders:**

Evaluate performance needs

Evaluate technical resources

Interpret script information relative to film sound

Design sound score appropriate to production and post-production needs

Select sound material

Hire talent, if necessary

Work with talent

Determine proper microphone and speaker placement

Compose, by recording and editing, a sound tape for production

Use mechanical and electrical sound effects for productions

Describe audio-for-video recording devices (analog, digital)

Set up audio-for-video recording devices (analog, digital)

Operate audio-for-video recording devices (analog, digital)

Describe time-code system for audio-video synchronization

Set up time-code system for audio-video synchronization

Operate time-code system for audio-video synchronization

Describe parts of an audio mixing console

Operate audio mixing console  
Create a MIDI sound score

# Unit: Web Page Design

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Demonstrate a basic understanding of web pages .

## Competency Builders:

Explain browsers

Explain how different browsers affect the look of a web page

Compare the various software editors available for designing web pages

Explain bandwidths and their implications (M)

Explain plug-ins

Define client

Define server

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P		

**Competency: Demonstrate a basic understanding of HTML**

**Competency Builders:**

Define what HTML is

Explain the importance of HTML standards

Identify the difference between various versions of HTML

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Create a basic HTML document

**Competency Builders:**

Identify the meaning and purpose of HTML tags

Open up a workspace to create a new HTML document

Use a text editor to create the basic HTML structure for a web page

Insert non-displayed comments into HTML files

Display document within a web browser

Make text modifications using the text editor

Identify the different levels of headings in HTML and the tags associated with them

Place different level headings within an HTML document

Identify the paragraph break tag in HTML

Insert paragraph breaks into the text of an HTML document

Cut and paste text

Insert a stylized footer at the bottom of a page

Format text

Create lists

Add graphics

Add animation

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Format page layout

**Competency Builders:**

Create a solid color background

Calculate the hexadecimal code for a color value (M)

Change the color of text and hypertext link items

Create a textured background from graphic file

Create hard rule lines with different thicknesses for page dividers

Create hard rule lines with different widths for page dividers

Create hard rule lines without 3D shading for page dividers

Design a web page table with rows and columns of text in a gridded display (M)

Write the HTML for integrated layout schemes of text and pictures

Write the HTML for an invisible table that creates side-by-side columns

Create a table that has different colored cells

Explain interface design



**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Add audio and video to a web page

**Competency Builders:**

Explain streaming audio and video

Explain audio sweetening

Explain audio and video compression

Use HTML codes to add audio and video to a web page

Explain network audio and video administration

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P		

**Competency:** Link documents

**Competency Builders:**

Identify the function of URLs (Uniform Resource Locators)

Recognize the structure of a URL

Copy URLs from a web browser to an HTML text document

Write an HTML anchor to link to another document in the same directory as the first document

Write an HTML anchor to link to another document in a different directory as the first document

Write an HTML anchor to link to another Web document on the Internet

Write an HTML anchor to link to files

Write an HTML anchor that links to another section of the same document

Incorporate a graphic that acts as a hyperlink to another document

Explain the significance of a file called index.html on a WWW server

Create a hypertext link that will send an e-mail message

Explain the difference between client-side image mapping and server-side image mapping

Create an inline image that has different portions hyperlinked to other web pages, pictures, and other sites on the Internet

Create hyperlinks for use of plug-ins

Use plug-ins

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency:** Create an organized web site

**Competency Builders:**

Explain the advantages of short multiple web pages over a single, long web page

Determine logical points to split information into multiple web pages

Create a template file using a text editor

Make appropriate changes to template file to create individual pages

Integrate hypertext links into the text

Insert HTML codes for links between pages

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency: Demonstrate a basic understanding of programming for the Web**

**Competency Builders:**

Explain the purpose of web content delivery enablers (e.g., CGI, API, SSI)

Explain how to interface client/server

Explain client-side processing and its advantages/disadvantages

Identify security issues related to client-side processing

Identify various scripting languages (e.g., JavaScript, Visual Basic Script, ActiveX)

Explain the uses and advantages of various scripting languages

Use a scripting language to program a site

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Demonstrate a knowledge of web hosting

**Competency Builders:**

Compare the advantages and disadvantages of running your own server vs using a server provider

Identify hardware requirements for a server

Identify server software options

Evaluate server providers

Establish a domain name

Explain TCP/IP (Transfer Control Protocol/Internet Protocol)

Upload files to the server

Publicize the site by submitting announcements to major search engines

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency: Identify web authoring software**

**Competency Builders:**

Identify available packages

Compare available packages

Compare available authoring methods

Identify cross platform issues

# Unit: Interactive Media Production

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:** Develop project concept

## Competency Builders:

Determine purpose of the interactive media project

Determine the target audience

Determine objectives

Research the content

Use appropriate message design (e.g., instructional, informational, entertainment)

Determine the setting where it will be used

Determine the interactive media elements to be used

Determine degree of interactivity desired

Address issues of accessibility and ADA compliance

Develop timeline for completion

Develop budget for project

Write proposal (C)



**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	C

**Competency:** Meet client needs

**Competency Builders:**

Determine client's needs and expected outcomes

Prepare cost estimate for client

Obtain client approvals throughout the project

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	

**Competency: Develop storyboard**

**Competency Builders:**

Make preliminary sketches showing placement of images and text, on screens

Show placement of buttons/navigational graphics

Add information on color schemes

Add information on lighting

Provide a sample screen

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency: Develop flowchart/navigational blueprint**

**Competency Builders:**

Develop flowchart with radial branching

Develop flowchart with linear branching

Develop flowchart with linking/non-linear branching

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	P	R	C

**Competency:** Write script

**Competency Builders:**

Describe music to be used

Describe video (still and motion)

Describe special effects (video and audio)

Write narration and actor lines

Describe scenes

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency:**        **Combine the various elements of interactive media to produce an interactive media project**

**Competency Builders:**

Exhibit proficiency in visual design skills

Generate text for multi-image presentations (e.g., title slides, charts, graphs)

Create 2-D computer graphics

Create 3-D computer graphics

Create computer animation

Use photographic process to enhance interactive media presentation

Integrate the use of photographic special effects into interactive media presentations

Digitize photographic images for interactive media

Use image manipulation program to alter digitized images

Integrate photographically-derived images with hand-drawn graphic images

Hire talent, if necessary

Work with talent

164

Create video footage

Use computer video-editing software to digitize and edit video footage

Record sound track including narration, voice-overs, sound effects, and music

Integrate sound with visuals

Build in hotspots and interactive links

Use appropriate authoring software to synthesize available interactive media technologies into a unified presentation

Meet expectations of audience through interactive presentations

Test the product

Debug the product

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency: Create various interactive media applications**

**Competency Builders:**

Produce a computer-generated business publication (e.g., training materials, sales materials, annual reports, charts & graphs)

Produce a CD-Rom presentation

Produce an Internet presentation

Produce a web page

Produce computer generated video

Produce KIOSK

Set up video conferencing system

Demonstrate computer-to-computer collaboration

**BIL:** Essential

<b>EDU:</b>	12	AD	AC
	I	P	

**Competency: Maintain interactive media equipment**

**Competency Builders:**

Demonstrate proper care and handling of interactive media equipment

Perform pre-and post-production routines for proper presentations

Analyze equipment performance against industry standards

Troubleshoot simple equipment problems





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