

LCB File No. T033-03

**ADOPTED TEMPORARY REGULATION OF THE
STATE BOARD OF EDUCATION/STATE BOARD
FOR OCCUPATIONAL EDUCATION**

Filed with the Secretary of State on April 18, 2003

Explanation: Matter in *italics* is new; matter in brackets [] is material to be omitted.

AUTHORITY: NRS 385.080

Section 1. NAC 389 is hereby amended as follows:

Section 2. *Information Technology Program Standards Grades 9-12. A course of study in information technology must be designed so that pupils meet the following performance standards:*

1. For the area of Network Systems, students will demonstrate an understanding of basic network systems to include administration, security, file and disk management, topology and internetworking design, implementation and network instrumentation:

- (a) demonstrate the fundamental tasks required to administer a network; and*
- (b) demonstrate the use of network security policies and procedures; and*
- (c) demonstrate proper file and disk management skills; and*
- (d) construct, differentiate and diagnose network systems.*

2. For the area of Information Technology Service and Support, students will demonstrate an understanding of basic hardware and software support, quality customer service skills, documentation skills, basic electronics and troubleshooting skills, utilizing electronic test equipment and hand tools:

- (a) demonstrate an understanding of hardware and software support; and*
- (b) demonstrate an understanding of quality customer service skills; and*
- (c) demonstrate proficiency with documentation skills; and*
- (d) demonstrate an understanding of basic electronics, troubleshooting skills and the proper use of repair tools.*

3. For the area of Multimedia, students will demonstrate an understanding of multimedia content creation and authoring. This will encompass fundamental drawing techniques, audio,

video, animation, typography, digital imaging and an understanding of web design and development, e-commerce, intellectual property and copyright law:

- (a) demonstrate an understanding of fundamental drawing techniques; and*
- (b) demonstrate an understanding of audio; and*
- (c) demonstrate an understanding of video; and*
- (d) demonstrate an understanding of computer animation; and*
- (e) demonstrate an understanding of typography; and*
- (f) demonstrate an understanding of computer digital imaging; and*
- (g) demonstrate an understanding of web design and development; and*
- (h) demonstrate an understanding of the fundamentals of e-commerce; and*
- (i) demonstrate an understanding of intellectual property and copyright law.*

4. For the area of Computer Programming, students will demonstrate an understanding of essential programming skills including the design and analysis, coding, testing and integration of software:

- (a) demonstrate an understanding of essential programming skills; and*
- (b) demonstrate an understanding of the design and analysis of software; and*
- (c) demonstrate an understanding of software coding; and*
- (d) demonstrate an understanding of software testing and integration.*

5. For the area of Computer Applications, students will demonstrate an understanding of contemporary application programs, including: spreadsheets, databases, word processing, desktop publishing and presentation software, to include installation, setup and upgrades:

- (a) demonstrate an understanding of office software application products; and*
- (b) demonstrate an understanding of software installation, setup and upgrades.*

6. For the area of Information Technology Management, students will demonstrate an understanding of the management of information technology areas within an organization, workplace interpersonal communication skills, proficiency in oral, written and presentation communication skills, enforcement and compliance of company policies and procedures. This content standard requires the student to have a pre-established technical information technology background:

- (a) demonstrate an understanding of the management of information technology organizational issues; and*

(b) demonstrate proficiency in communication skills; and

(c) demonstrate an understanding of the enforcement and compliance of company information technology policies and procedures.

7. For the area of Telecommunications, students will demonstrate an understanding of telecommunications technology, including telephony, public switch telephone network (PSTN) and its operation and specifications, broadband and baseband LAN/MAN/WAN technologies, wireless technologies and emerging communications technologies:

(a) demonstrate an understanding of telephony and PSTN, including its operation and specifications; and

(b) demonstrate an understanding of broadband and baseband LAN/MAN/WAN systems; and

(c) demonstrate an understanding of wireless technologies.

8. For the area of Employability Skills, students shall achieve competence in workplace readiness, career development, and lifelong learning:

(a) demonstrate problem-solving skills; and

(b) demonstrate critical- thinking skills; and

(c) demonstrate the ability to speak, write and listen effectively; and

(d) demonstrate the ability to select, apply and maintain appropriate technology; and

(e) demonstrate leadership and teamwork skills; and

(f) demonstrate sound work ethics; and

(g) demonstrate the ability to effectively manage resources; and

(h) demonstrate career planning and development skills; and

(i) demonstrate job retention and lifelong learning.

Section 3. Computer-Aided Drafting and Design. *A course of study in computer-aided drafting and design must be designed so that pupils meet the following performance standards by the completion of an advanced program of instruction:*

1. For the area of fundamental drafting skills, the student shall demonstrate skill in geometric constructions, measurement and scaling, conventional drafting practices, multi-view drawings, dimensions and annotations, pictorial drawings, and development of drawings and models.

- (a) Create various geometric constructions;*
- (b) Demonstrate appropriate measuring and scaling techniques;*
- (c) Demonstrate conventional drafting practices;*
- (d) Create multi-view drawings using orthographic projections;*
- (e) Apply dimensions and annotations;*
- (f) Create pictorial drawings;*
- (g) Create development drawings and models.*

2. For the area of fundamental computer skills, understand computer-aided drafting and design processes as demonstrated by the student's ability to:

- (a) Determine fundamental safety and ergonomic factors in the CADD work environment;*
- (b) Maintain, operate and adjust computer hardware;*
- (c) Demonstrate proficiency in common operating systems and software.*

3. For the area of fundamental computer-aided drafting and design skills, understand computer-aided drafting and design processes as demonstrated by the student's ability to:

- (a) Perform drawing setup and layout;*
- (b) Create, apply and modify annotations;*
- (c) Construct and manipulate problems using the Cartesian Coordinate System;*
- (d) Create and modify geometric entities utilizing command sequences;*
- (e) Utilize media output.*

4. For the area of advanced computer-aided drafting and design skills, understand computer-aided drafting and design processes as demonstrated by the student's ability to:

- (a) Develop symbols, attributes, and libraries;*
- (b) Apply appropriate geometric dimensioning and tolerancing standards;*
- (c) Output drawings;*
- (d) Develop and display three-dimensional models;*
- (e) Develop and construct presentation drawings;*
- (f) Customize and computer-aided drafting and design working environment.*

5. For the area of related disciplines, understand computer-aided drafting and design principles as demonstrated by the student's ability to:

- (a) Apply drafting concepts related to basic manufacturing processes;*
- (b) Apply drafting concepts related to basic architectural design;*

(c) Apply drafting concepts related to basic geographic information systems and civil engineering;

(d) Apply drafting concepts related to basic electronics.

6. For the area of employability skills, achieve workplace readiness, career development, and lifelong learning as demonstrated by the student's ability to:

(a) Demonstrate problem-solving skills;

(b) Demonstrate critical-thinking skills;

(c) Demonstrate the ability to speak, write, and listen effectively;

(d) Demonstrate the ability to select, apply, and maintain appropriate technology;

(e) Demonstrate leadership and teamwork skills;

(f) Demonstrate sound workplace ethics;

(g) Demonstrate the ability to effectively manage resources in high-performance workplaces;

(h) Demonstrate career planning and development skills;

(i) Demonstrate job retention and lifelong-learning skills.

**NOTICE OF ADOPTION OF TEMPORARY REGULATION
LCB File No. T033-03**

INFORMATIONAL STATEMENT

1. A description of how public comment was solicited, a summary of public response, and explanation how other interested persons may obtain a copy of the summary.

The Notice of Workshop to Solicit Comments on proposed revisions to NAC 389, Occupational Skills Standards: Information Technology and Computer-Aided Drafting and Design , was sent to approximately one-hundred fifty individuals and educational organizations. A workshop was conducted on March 8, 2003, to provide the opportunity for comments by affected parties and the public. There were comments from the public.

The Notice of Intent to Act Upon a Regulation for a public hearing on Board adoption of regulation language was sent to approximately one-hundred fifty individuals and educational organizations. One public hearing was conducted on March 8, 2003, to provide the opportunity for comments by affected parties and the public. There were public comments.

The regulation language was adopted by the State Board without revision on April 12, 2003.

2. The Number of Persons Who:

a) Attended Each Hearing: Workshop: 20 Hearing: 21

b) Testified at Each Hearing; Workshop: 2 Hearing: 1

and,

c) Submitted Written Statements: Workshop: 0 Hearing: 0

A copy of any written comments may be obtained by calling LaDonna Byrd, Board Secretary, at the Department of Education (775) 687-9225, or by writing to the Department of Education, 700 East Fifth Street, Carson City, Nevada 89701-5096.

3. A description of how comment was solicited from affected businesses, a summary of the response and an explanation how other interested parties may obtain a copy of the summary.

Comment was solicited through workshop notice and public hearing notice of February 5, 2003. There were comments from the public.

At the workshop held March 8, 2003, Dr. Warren Hioki, Associate Dean, Community College of Southern Nevada, noted that the proposed information technology standards will serve as a motivator to all IT educators for preparing students for IT occupations; Bob Diaz, Professor, Community College of Southern Nevada, Las Vegas, also advised that, as a facilitator of the writing team for the CADD skills standards, the most difficult issue was the need to retain the necessary basic skills while moving into the use of computers for drafting.

At the public hearing held March 8, 2003, Doug Roix, Teacher, Reno, spoke in support of the proposed standards.

The adoption of the proposed regulation language was delayed until April 12, 2003.

A copy of the summary and/or minutes of the public hearing may be obtained by calling LaDonna Byrd, Board Secretary, at the Department of Education (775) 687-9225, or by writing to the Department of Education at 700 East Fifth Street, Carson City, Nevada 89701-5096.

4. If the regulation was adopted with or without change to any part of the proposed regulation, a summary of the reasons for adopting.

The temporary regulation language was adopted by the Nevada State Board of Education on April 12, 2003.

5. The estimated economic effect of the adopted regulation on the business which it is to regulate and on the public. These must be stated separately, and each case must include:

There is no economic effect on the business which is regulated. There is no estimated economic effect on the public, either adversely or beneficially, nor immediate or long term.

6. The estimated cost to the agency for enforcement of the adopted regulation.

There is no additional cost to the agency for enforcement of this regulation.

7. A description of any regulations of other state or government agencies which the proposed regulation overlaps or duplicates and a statement explaining why the duplication or overlapping is necessary. If the regulation overlaps or duplicates a federal regulation, the name of the regulating federal agency.

No other state or government agency regulations will be overlapped or duplicated by the above noted regulations. There is no duplication or overlap of federal regulations.

8. If the regulation includes provisions which are more stringent than a federal regulation which regulates the same activity, a summary of such provisions.

There are none.

- 9. If the regulation provides a new fee or increases an existing fee, the total annual amount the agency expects to collect and the manner in which the money will be used.**

This regulation does not provide or involve a new fee.