LCB File No. R040-05

PROPOSED REGULATION OF THE STATE BOARD OF EDUCATION

(This proposed regulation was previously adopted as T039-05)
(Updated version posted June 29, 2005)

Name/Title of Proposed Regulation: Adoption of revisions to nac 389, occupational skill standards for Metalworking and Welding

1. Describe the need for and purpose of the proposed revisions to existing regulations or proposed new regulations.

Establishment of current state skill standards for Metalworking and Welding to update the existing course of study requirements.

2. Describe either a) the terms or substance of the proposed revisions to existing regulations or new regulations, or b) the subjects and issues involved.

The proposed state skill standards would update the existing course of study for Metalworking and Welding, which is outdated.

3. Provide the annual estimated economic effect of the proposed revisions or new regulation on the business which it is to regulate in terms of adverse, beneficial, immediate and long-term effects (i.e., school districts, schools, etc.).

The economic impact on school districts is negligible, since the districts revise existing curriculum periodically. The development of state skill standards has been widely supported by school districts.

4. Provide the annual estimated economic effect of the proposed revisions or new regulations on the public which it is to regulate in terms of adverse, beneficial, immediate and long-term effects (i.e., teachers, pupils).

There is no annual estimated economic effect.

5. Provide the annual estimated cost to the agency (Department of Education) for enforcement of the proposed revisions or new regulation.

There is no annual estimated cost to the agency.

6. Do the proposed revisions or new regulations overlap or duplicate any regulations of other state or local governmental (i.e., federal) agencies? If yes, please explain the necessity of the overlap or duplication.

N/A

7. Do the proposed revisions or new regulations establish any new fee or proposes an increase to an existing fee of the agency? If yes, please explain.

None

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

METALWORKING

AUTHORITY: NRS 385.080 & (if necessary, provide other statutory authority)

Section 1. NAC 389 is hereby amended as follows:

Section 2. NAC 389*.---Metalworking. (NRS 385.080, 385.110) A course of study in metalworking must be designed so that students meet the following performance standards by the completion of an advanced program of instruction:*

1. For the area of safety, the student shall demonstrate safe work practices while performing operations in the metalworking lab and comply with personal and environmental safety practices associated with clothing; eye and hearing protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of materials in accordance with local, state, and federal safety and environmental regulations, as demonstrated by the student's ability to:

(a) Adhere to general lab safety rules as they apply to flammables, ventilation, electrical hazards, maintain of orderly work areas, personal protective wear, safe use of tools and equipment, work habits and behaviors, lifting, and emergency response.

(b) Adhere to specific lab fire safety procedures and rules applying to extinguishers, evacuation, knowledge of potential fire hazards, ventilation, personal protective wear, and storage of flammables.

2. For the area of measurement and layout techniques, the student shall understand the proper use of layout and measurement tools and techniques, as demonstrated by the student's ability to:

(a) Use measuring tools to complete required lab assignments.

(b) Use and apply layout tools to complete required lab projects.

(c) Interpret basic prints and develop a working drawing.

(d) Apply basic mathematical skills common to the metalworking industry.

3. For the area of metallurgy, the student shall understand the classification and physical properties of different types of metals common to the welding industry, as demonstrated by the student's ability to:

(a) Identify metal types and shapes.

(b) Describe and apply the principles of metallurgy as they apply to hardening and annealing.

(c) Describe the effects of heating and cooling of metals to be fabricated.

4. For the area of tools and machines, the student shall understand how to safely operate commonly used metalworking machines and tools, as demonstrated by the student's ability to:

(a) Identify and safely operate stationary power machines commonly used in the welding industry.

(b) Identify and safely operate portable power machines commonly used in the welding industry.

(c) Identify and safely hand tools commonly used in the welding industry.

5. For the area of welding techniques, the student shall demonstrate an understanding of proper welding and cutting techniques, as demonstrated by the student's ability to:

(a) Demonstrate use of proper personal protective equipment and procedures.

(b) Demonstrate the set-up and operation use of oxy-fuel welding and cutting equipment.

(c) Demonstrate the set-up and operation use of shielded metal arc welding equipment.

(d) Demonstrate the set-up and operation use of gas metal arc welding equipment.

(e) Demonstrate the set-up and operation use of gas tungsten are welding equipment.

(f) Demonstrate the set-up and operation use of plasma arc welding equipment.

6. For the area of sheet metal, the student shall demonstrate an understanding of proper layout, forming and fastening techniques, as demonstrated by the student's ability to:

(a) Demonstrate pattern development and layout techniques.

(b) Identify and demonstrate the use of sheet metal forming machines and hand tools.

(c) Identify and demonstrate the use of various sheet metal fastening techniques.

7. For the area of machine tools, the student shall demonstrate an understanding of the identification of machine tools and safe operation, as demonstrated by the student's ability to:

(a) Set-up and safely operate metal cutting lathes.

(b) Set-up and safely operate milling machines.

(c) Set-up and safely operate the drill press.

8. 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.

WELDING

AUTHORITY: NRS 385.080 & (if necessary, provide other statutory authority)

Section 1. NAC 389 is hereby amended as follows:

Section 2. NAC 389.612 Welding. (NRS 385.080, 385.110) ~~[A course of study in welding must include instruction designed to teach the pupil to do the following:~~

~~1. Cut metal with machine and manual torches.~~

~~2. Butt weld and fillet weld in any position using:~~

~~(a) Brass and silver;~~

~~(b) A metallic arc;~~

~~(c) Arc welding with tungsten gas; and~~

~~(d) Metallic inert gas.~~]

A course of study in welding must be designed so that students meet the following performance standards by the completion of an advanced program of instruction:

1. For the area of safety, students shall demonstrate safe work practices while performing operations in the welding lab and comply with personal and environmental safety practices associated with clothing; eye and hearing protection; hand tools; power equipment; proper ventilation; and the handling, storage, and disposal of materials in accordance with local, state, and federal safety and environmental regulations, as demonstrated by the student's ability to:

(a) Adhere to general lab safety rules as they apply to flammables, ventilation, electrical hazards, maintain of orderly work areas, personal protective wear, safe use of tools and equipment, work habits and behaviors, lifting, and emergency response.

(b) Adhere to specific lab fire safety procedures and rules applying to extinguishers, evacuation, knowledge of potential fire hazards, ventilation, personal protective wear, and storage of flammables.

2. For the area of measurement and layout techniques, the student shall understand the proper use of layout and measurement tools and techniques, as demonstrated by the student's ability to:

(a) Use measuring tools to complete required lab assignments.

(b) Use and apply layout tools to complete required lab projects.

(c) Interpret basic prints and develop working drawing.

(d) Apply basic mathematical skills common to the welding industry.

3. For the area of metallurgy, the student shall understand the classification and physical properties of different types of metals common to the welding industry, as demonstrated by the student's ability to:

(a) Identify metal types and shapes.

(b) Describe the effects of heating, cooling and annealing processes of metals to be fabricated.

4. For the area of tools and machines, the student shall understand how to safely operate commonly used welding machines and tools, as demonstrated by the student's ability to:

(a) Identify and safely operate stationary power machines commonly used in the welding industry.

(b) Identify and safely operate portable power machines commonly used in the welding industry.

(c) Identify and safely hand tools commonly used in the welding industry.

5. For the area of oxy-fuel welding and cutting, the student shall demonstrate an understanding of proper welding and cutting techniques, as demonstrated by the student's ability to:

(a) Demonstrate use of proper personal protective equipment and procedures.

(b) Identify, select, set-up and demonstrate the use of oxy-fuel welding equipment.

(c) Identify, select, set-up and demonstrate the use of oxy-fuel cutting equipment.

(d) Identify, select, set-up and demonstrate the use of oxy-fuel brazing equipment.

6. For the area of shielded metal arc welding, the student shall demonstrate an understanding of proper shielded metal arc welding techniques, as demonstrated by the student's ability to:

(a) Demonstrate safety procedures and describe the electrical theory of shielded metal arc welding.

(b) Select and set-up the appropriate equipment and consumables used in shielded metal arc welding.

(c) Demonstrate shielded metal arc welding using appropriate safety techniques.

7. For the area of gas metal arc welding, the student shall demonstrate an understanding of proper gas metal arc welding techniques, as demonstrated by the student's ability to:

(a) Demonstrate safety procedures and describe the electrical theory of gas metal arc welding.

(b) Select and set-up the appropriate equipment and consumables used in gas metal arc welding.

(c) Demonstrate gas metal arc welding using appropriate safety techniques.

8. For the area of flux core arc welding, the student shall demonstrate an understanding of proper flux cored arc welding techniques, as demonstrated by the student's ability to:

(a) Demonstrate safety procedures and describe the electrical theory of flux cored arc welding.

(b) Select and set-up the appropriate equipment and consumables used in flux cored arc welding.

(c) Demonstrate flux cored arc welding using appropriate safety techniques.

9. For the area of gas tungsten arc welding, the student shall demonstrate an understanding of proper of gas tungsten arc welding techniques, as demonstrated by the student's ability to:

(a) Demonstrate safety procedures and describe the electrical theory of gas tungsten arc welding.

(b) Select and set-up the appropriate equipment and consumables used in of gas tungsten arc welding.

(c) Demonstrate gas tungsten arc welding using appropriate safety techniques.

10. For the area of plasma arc cutting, the student shall demonstrate an understanding of proper of plasma arc cutting techniques, as demonstrated by the student's ability to:

(a) Demonstrate safety procedures and describe the electrical theory of plasma arc cutting.

(b) Select and set-up the appropriate equipment and consumables used in of plasma arc cutting.

(c) Demonstrate plasma arc cutting using appropriate safety techniques.

11. For the area of fabrication, the student shall demonstrate an understanding of tools, equipment and fabrication techniques, as demonstrated by the student's ability to:

(a) Identify and demonstrate the use of fabrication techniques and equipment while planning, designing, laying-out, and constructing projects.

(b) Identify and perform non-destructive weld testing techniques.

(c) Identify and perform destructive weld testing techniques.

12. 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.