

**American Council on Education
College Credit Recommendation Service**

**THE INTERNATIONAL ASSOCIATION OF BRIDGE, STRUCTURAL, ORNAMENTAL,
AND REINFORCING IRONWORKERS
DISTRICT COUNCIL OF NORTHERN NEW JERSEY
IRONWORKERS TRAINING PROGRAM
12 EDISON PLACE
SPRINGFIELD, NEW JERSEY 07081-1310**

**LOCAL UNION NO.'S:
11, 45, 373, 480, 483 (SPRINGFIELD)
350 (ATLANTIC CITY),
399 (CAMDEN), 68 (TRENTON)**

MARCH 31-APRIL 1, 2005

**Review Conducted By
Thomas Edison State College
Trenton, New Jersey**

**THE INTERNATIONAL ASSOCIATION OF BRIDGE, STRUCTURAL, ORNAMENTAL, AND
REINFORCING IRONWORKERS
DISTRICT COUNCIL OF NORTHERN NEW JERSEY IRONWORKERS TRAINING PROGRAM**

The International Association of Bridge, Structural, Ornamental and Reinforcing Iron Workers was established in 1896. The Iron Workers represent over 130,000 skilled workers in the construction industry in the United States and Canada. In conjunction with their local unions and signatory employers, the Iron Workers recruit, train and certify members to work in the iron working trade providing career employment opportunities, fair pay, health and welfare benefits, continuing education and other benefits for members. Iron Workers work in many areas of construction including fabricating shops, erecting structural steel, placing reinforcing steel for concrete, installing ornamental and decorative iron work, laying metal decking, installing curtain walls, and rigging and moving equipment and machinery. The Iron Workers also build bridges, stadiums, towers, schools, hospitals, auto plants, steel mills, refineries and many other parts of the infrastructure of the United States and Canada.

Source of Official Student Records: Registry of Credit Recommendations, American Council on Education, One Dupont Circle, Washington, DC 20036-1193.

Additional information about the courses: Office of Corporate Higher-Education Programs, Thomas Edison State College, 101 West State Street; Trenton, New Jersey 08608-1176, (609) 633-6271; corpinfo@tesc.edu .

***ACE/College Credit Recommendation Service Evaluation
Conducted By
Thomas Edison State College***

For

***The International Association of Bridge,
Structural, Ornamental, and Reinforcing Ironworkers
District Council of Northern New Jersey
Ironworkers Training Program***

on

March 31-April 1, 2005

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**The International Association of Bridge,
Structural, Ornamental, and Reinforcing Ironworkers
District Council of Northern New Jersey
Ironworkers Training Program**

March 31-April 1, 2005

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**The International Association of Bridge,
Structural, Ornamental, and Reinforcing Ironworkers
District Council of Northern New Jersey
Ironworkers Training Program**

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Total Courses - 27

Total Credits - 46 (44 credits in Associate/Baccalaureate level

&

2 credits in Vocational Certificate level)

Credit Recommendation

Course: Architectural and Ornamental Construction 1

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 50 hours (30 classroom hours and 20 lab or shop hours)

Date(s): January 2000 - Present

Objective: To enable a student to work in architectural and ornamental construction.

Learning Outcomes: Upon successful completion of this course, the student will be able to:
operate layout instruments; construct curtain walls; construct window walls; construct sloped walls and skylights; erect store fronts, entrance ways and glass rails.

Instruction: Major topics covered in the course are: Operating layout instruments; constructing curtain walls; constructing window walls; constructing sloped walls and skylights; erecting store fronts, entrance ways and glass rails. Methods of instruction include: for the classroom component: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and tests for each of the units of instruction; for the lab or shop component: skill and safety demonstrations by the instructor, practice by the students while being observed and coached by the instructor, and assessment of the performance of each skill. Evaluation criteria include: successful completion of all course classroom and lab or shop assignments and successful completion of the course knowledge and skill tests.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 2 semester hours in Ornamental Ironwork (04/05).

Credit Recommendation

Course: Architectural and Ornamental Construction 2

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 50 hours (30 classroom hours and 20 hours-lab or shop)

Date(s): January 2000 - Present

Objective: To enable a student to work in architectural and ornamental construction.

Learning Outcomes: Upon successful completion of this course, the student will be able to:
apply sealants; test window and curtain wall systems; glaze; install miscellaneous metals; and install doors.

Instruction: Major topics covered in the course are: Applying sealants; testing window and curtain wall systems; glazing systems; installing miscellaneous metals; and installing doors. Methods of instruction include: for the classroom component: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and tests for each of the units of instruction; for the lab or shop component: skill and safety demonstrations by the instructor, practice by the students while being observed and coached by the instructor, and assessment of the performance of each skill. Evaluation criteria include: successful completion of all course classroom and lab or shop assignments and successful completion of the course knowledge and skill tests.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 2 semester hours in Advanced Ornamental Ironwork (04/05).

Credit Recommendation

Course: Architectural and Ornamental Construction Field Experience

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 1100 field experience hours

Date(s): January 2000 - Present

Objective: To enable a student to work in architectural and ornamental construction.

Learning Outcomes: Upon successful completion of this course, the student will be able to: apply the following in the field; operate layout instruments; construct curtain walls; construct window walls; construct sloped walls and skylights; erect store fronts, entrance ways and glass rails; apply sealants; test window and curtain wall systems; glaze; install miscellaneous metals; and install doors.

Instruction: Major topics covered in the course are: Operating layout instruments; constructing curtain walls; constructing window walls; constructing sloped walls and skylights; erecting store fronts, entrance ways and glass rails; applying sealants; testing window and curtain wall systems; glazing systems; installing miscellaneous metals; and installing doors. Methods of instruction include: This is a field experience course required under apprenticeship guidelines and Department of Labor (DOL) standards. The student will work under the supervision of a foreman as she or he applies the knowledge and skills learned in the classroom. The student will maintain a logbook of knowledge and skills applied in the field. The foreman may provide skill and safety demonstrations and will observe, coach and assess the student's performance. Evaluation criteria include: successful completion of all field experience activities as demonstrated by completion of the logbook.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 2 semester hours in Field Experience (04/05).

Credit Recommendation

Course: Blueprint Reading

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 20 hours

Date(s): January 2000 - Present

Objective: To enable a student to read construction blueprints.

Learning Outcomes: Upon successful completion of this course, the student will be able to: identify the elements of construction drawing; orientate themselves to their location as specified by blueprints for project layout; identify characteristics of steel frame construction; read, understand and implement four basic types of drawings, architectural and engineering drawings, and conveyor header drawings, as specified by blueprints for project layout.

Instruction: Major topics covered in the course are: Elements of construction drawing; steel frame construction drawings; types of drawings; architectural and engineering drawings; and conveyor drawings. Methods of instruction include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and tests for each of the units of instruction. Evaluation criteria include: successful completion of all course classroom assignments and successful completion of the course knowledge tests.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Blueprint Reading (04/05).

Credit Recommendation

Course: Disaster Response Training for Ironworkers

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 16 hours

Date(s): January 2003 - Present

Objective: To enable a student to maintain personal safety at a disaster site.

Learning Outcomes: Upon successful completion of this course, the student will be able to:
identify components of the incident command system and unified command systems; identify safety and health hazards; recognize CBRN agents and traumatic incident stress awareness; describe techniques for respiratory protection and how to use personal protective equipment; describe the decontamination process.

Instruction: Major topics covered in the course are: incident command system and unified command systems; safety hazards; health hazards; CBRN agents; traumatic incident stress awareness; respiratory protection; personal protective equipment; and decontamination. Methods of instruction include: Interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and tests for each of the units of instruction. Evaluation criteria include: successful completion of all course classroom assignments and successful completion of the course knowledge test.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Emergency Preparedness (04/05).

Credit Recommendation

Course: Hazardous Material Training

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 40 hours (30 classroom hours and 10 hands-on hours)

Date(s): January 2000 - Present

Objective: To enable a student to work at hazardous waste sites.

Learning Outcomes: Upon successful completion of this course, the student will be able to: describe legal rights and responsibilities and the health effects of hazardous materials and be able to recognize hazards; use hazardous materials information sources; demonstrate the correct use of personal protective equipment and respirators as well as appropriate site practices and hazard control; describe processes and procedures for decontamination, medical surveillance and site control; describe processes and procedures for monitoring, emergency response and for working in confined spaces.

Instruction: Major topics covered in the course are: legal rights and responsibilities; health effects; hazard recognition; information sources; personal protective equipment and respirators; site practices and hazard control; decontamination; medical surveillance; site control; monitoring; emergency response; and confined spaces. Methods of instruction include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and a final test. The hands-on component involves skill and safety demonstrations by the instructor, practice by the students while being observed and coached by the instructor, and assessment of the performance of each skill. Evaluation criteria include: successful completion of all course classroom and hands-on assignments and successful completion of the course knowledge and skill tests.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 2 semester hours in Hazardous Materials (04/05).

Credit Recommendation

Course: History of the Ironworkers Union

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 34 hours

Date(s): January 2000 - Present

Objective: To enable a student to explain the history of the Ironworkers union.

Learning Outcomes: Upon successful completion of this course, the student will be able to: describe the factors leading to the birth of the union and other significant events in American labor history; describe the birth of the union and the major events occurring up through the 1930s; describe the major events occurring during the 1940s and 1950s; describe the major events occurring during the 1960s and 1970s; describe the major events occurring from the 1970s to the present.

Instruction: Major topics covered in the course are: Factors leading to the birth of the union; the birth of the union; the turbulent years 1906-1912 (the McNamara affair); the conspiracy trials and aftermath; the beginning of the Morin era; the Depression and a new deal for labor – 1930-1940 (Davis-Bacon Act); World War II and post-war struggles – 1941-1952 (Taft-Hartley Act); Ironworkers grow in the 1950s (red scare, Eisenhower administration); John H. Lyons and the 1960s; the tradition continues 1977-1988; Pathways to the 21st century. Methods of instruction include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and a final test. Evaluation criteria include: successful completion of all course classroom assignments and successful completion of the course knowledge test, and a written research paper, case study or interview with current labor leader.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 2 semester hours in History of Ironworkers Union (04/05).

Credit Recommendation

Course: Lead Hazard Training for Ironworkers

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 32 hours (24 classroom hours and 8 hands-on lab or shop hours)

Date(s): January 2000 - Present

Objective: To enable a student to work on construction sites where there is a possibility of lead exposure.

Learning Outcomes: Upon successful completion of this course, the student will be able to: explain the history of lead, its uses and the health effects caused by lead exposure; identify regulations and sampling methods related to lead; explain hazard communication regulations and workers legal rights related to lead; demonstrate appropriate use of personal protective equipment and describe work methods on steel structures when lead may be present; describe general site safety, safe work practices, and confined space entry as related to working on construction sites where there is a possibility of lead exposure.

Instruction: Major topics covered in the course are: History of lead and its uses; health effects caused by lead exposure; regulations; sampling methods; hazard communication regulations; workers legal rights; personal protective equipment; work methods on steel structures; and general site safety, safe work practices, and confined space entry. Methods of instruction for the classroom component include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and tests for each of the units of instruction; for the lab or shop component: skill and safety demonstrations by the instructor, practice by the students while being observed and coached by the instructor, and assessment of the performance of each skill. Evaluation criteria include: successful completion of all course classroom and lab or shop assignments and successful completion of the course knowledge and skill tests.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Lead Hazard Training (04/05).

Credit Recommendation

Course: Mathematics for Iron Workers

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 1145), and Trenton, NJ (68)

Length: 30 hours

Date(s): January 2005 - Present

Objective: To enable a student to apply basic mathematics to the iron working trade.

Learning Outcomes: Upon successful completion of this course, the student will be able to: perform addition, subtraction, multiplication, division and multiple operations with whole numbers, common and decimal fractions; perform calculations involving percentages, averages, exponents, roots, ratios and proportions; perform calculations involving linear, area, circular and volume measurements; perform calculations using basic geometry and trigonometry and apply these operations to Iron Worker problems.

Instruction: Major topics covered in the course are: whole numbers, common fractions, decimal fractions, percentages, averages, exponents, roots, ratio, proportion, linear measurement, area measurement, circular measurement, volume measurement, points, lines and angles, triangles, quadrilaterals, constructing and bisecting lines and angles, right triangles and the Pythagorean Theorem, right triangles and the trigonometric functions, and oblique triangles. Methods of instruction include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of PowerPoint presentations that show step-by-step how to solve each type of problem, and tests for each of the eight units of instruction. Evaluation criteria include: successful completion of all course assignments, class participation and successful completion of the course tests.

Credit Recommendation: In the vocational certificate category, 2 semester hours in Basic Math (04/05).

Credit Recommendation

Course: Metrics for Iron Workers

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 20 hours

Date(s): January 2000 - Present

Objective: To enable a student to work with the metric system.

Learning Outcomes: Upon successful completion of this course, the student will be able to: identify and apply competencies using the metric system; measure length using metrics; measure weight using metrics; measure volume using metrics; and measure temperature using metrics.

Instruction: Major topics covered in the course are: metric terminology; basics of metric measurement; measuring length using metrics; measuring weight using metrics; measuring volume using metrics; and measuring temperature using metrics. Methods of instruction include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom and tests for each of the five units of instruction. Evaluation criteria include: successful completion of all course assignments, class participation and successful completion of the course tests.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Technical Mathematics (04/05).

Credit Recommendation

Course: Mine Safety and Health Administration (MSHA) Training for Ironworkers

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 24 hours (20-lecture, 4-lab)

Date(s): January 2000 - Present

Objective: To enable a student to demonstrate appropriate safety and health practices when working on a mine site.

Learning Outcomes: Upon successful completion of this course, the student will be able to: identify miner's rights and responsibilities and the health effects of surface mining; use respiratory devices and perform self rescue, locate and explain specific health and safety regulations and identify transportation and communication systems; explain aspects of a ground control plan, describe the work environment of a surface mine and identify electrical hazards; prevent fires and take appropriate action in case of fire, recognize mine hazards, and recognize hazards related to explosives; and administer first aid/CPR.

Instruction: Major topics covered in the course are: Miner's rights and responsibilities; health effects of surface mining; respiratory devices and self rescue; mine specific health and safety regulations; transportation and communication systems; ground control plan; work environment of a surface mine; electrical hazards; fires and appropriate action in case of fire; mine hazards; hazards related to explosives; and first aid/CPR. Methods of instruction for the classroom component include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and tests for each of the units of instruction; for the first aid/CPR component: instructor demonstration, student practice and skill assessment. Evaluation criteria include: successful completion of all course classroom assignments and successful completion of the course knowledge and first aid/CPR skill tests.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Mine, Safety and Health Administration (04/05).

Credit Recommendation

Course: OSHA 30-Hour Safety Course

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 30 hours

Date(s): January 2000 - Present

Objective: To enable a student to work safely on construction sites.

Learning Outcomes: Upon successful completion of this course, the student will be able to: apply OSHA standards including Subpart C, Standard 3-1.1, Subpart D and Subpart E, Subpart F, Subpart H, Subpart I and Subpart J, Subpart K, Subpart L, Subpart M and Subpart N, Subparts O, W, G, P, Q, X, confined space entry, Subpart R and lead hazard.

Instruction: Major topics covered in the course are: Introduction to OSHA standards, Subpart C, Standard 3-1.1, Subpart D, Subpart E, Subpart F, Subpart H, Subpart I, Subpart J, Subpart K, Subpart L, Subpart M, Subpart N, Subpart O, Subpart W, Subpart G, Subpart P, Subpart Q, Subpart X, confined space entry, Subpart R, and lead hazards in construction. Methods of instruction in the classroom component include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and a test. Evaluation criteria include successful completion of all course classroom assignments and successful completion of the course knowledge test.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 2 semester hours in OSHA 30-hour Safety Course (04/05).

Credit Recommendation

Course: Post-Tensioned Reinforcing Systems

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 60 hours (45 classroom hours and 15 hours-lab or shop)

Date(s): January 2001 - Present

Objective: To enable a student to install post-tensioned reinforcing systems.

Learning Outcomes: Upon successful completion of this course, the student will be able to: apply the principles and theories of post-tensioning; identify the components of single strand unbonded tendon systems, multi-strand tendon systems, and bar post-tensioning systems; use the tools, equipment and procedures to unload, handle, layout, install, stress, grout and finish each type of post-tensioning system; apply proper procedures for detensioning and performing lift-offs on post-tensioning systems; troubleshoot and repair post-tensioning systems and equipment on the job; install and stress post-tensioned barrier cable systems.

Instruction: Major topics covered in the course are: principles and theories of pre-stressed concrete; principles and theories of post-tensioning; components of post-tensioning systems; components of stressing equipment; tools and equipment used to install, stress, grout and finish post-tensioning systems; unloading, handling and storage of post-tensioning components; layout and installation of single strand unbonded post-tensioning systems and components; preparation, stressing and finishing of single strand unbonded post-tensioning systems; components and special requirements for encapsulated systems; layout and installation of multi-strand post-tensioning systems and components; preparation, stressing and finishing of multi-strand post-tensioning systems; layout and installation of bar post-tensioning systems and components; preparation, stressing and finishing of bar post-tensioning systems; grouting of bonded post-tensioning systems; installation, stressing and finishing of post-tensioned barrier cable systems; troubleshooting and repair of post-tensioning systems and equipment on the job. Methods of instruction for the classroom component include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and tests for each of the units of instruction; for the lab or shop component: skill and safety demonstrations by the instructor, practice by the students while being observed and coached by the instructor, and assessment of the performance of each skill. Evaluation criteria include: successful completion of all course classroom and lab or shop assignments and successful completion of the course knowledge and skill tests.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 2 semester hours in Structural Steel Structures (04/05)

Credit Recommendation

Course: Post-Tensioned Reinforcing Systems Field Experience

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 500 field experience hours

Date(s): January 2001 - Present

Objective: To enable a student to install post-tensioned reinforcing systems.

Learning Outcomes: Upon successful completion of this field experience, the student will be able to: apply the principles and theories of post-tensioning; identify the components of single strand unbonded tendon systems, multi-strand tendon systems, and bar post-tensioning systems; use the tools, equipment and procedures to unload, handle, layout, install, stress, grout and finish each type of post-tensioning system; apply proper procedures for detensioning and performing lift-offs on post-tensioning systems; troubleshoot and repair post-tensioning systems and equipment on the job; install and stress post-tensioned barrier cable systems.

Instruction: Major topics covered in the course are: principles and theories of pre-stressed concrete; principles and theories of post-tensioning; components of post-tensioning systems; components of stressing equipment; tools and equipment used to install, stress, grout and finish post-tensioning systems; unloading, handling and storage of post-tensioning components; layout and installation of single strand unbonded post-tensioning systems and components; preparation, stressing and finishing of single strand unbonded post-tensioning systems; components and special requirements for encapsulated systems; layout and installation of multi-strand post-tensioning systems and components; preparation, stressing and finishing of multi-strand post-tensioning systems; layout and installation of bar post-tensioning systems and components; preparation, stressing and finishing of bar post-tensioning systems; grouting of bonded post-tensioning systems; installation, stressing and finishing of post-tensioned barrier cable systems; troubleshooting and repair of post-tensioning systems and equipment on the job. Methods of instruction include: This is a field experience course required under apprenticeship guidelines and Department of Labor (DOL) standards. The student will work under the supervision of a foreman as she or he applies the knowledge and skills learned in the classroom. The student will maintain a logbook of knowledge and skills applied in the field. The foreman may provide skill and safety demonstrations and will observe, coach and assess the student's performance. Evaluation criteria include: successful completion of all field experience activities as demonstrated by completion of the logbook.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Field Experience (04/05).

Credit Recommendation

Course: Precast Safety and Erection

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 30 hours (20 classroom hours and 10 hours-lab or shop)

Date(s): January 2000 - Present

Objective: To enable a student to safely erect precast concrete.

Learning Outcomes: Upon successful completion of this course, the student will be able to: complete preconstruction planning; identify precast concrete erection practices and procedures and precast concrete equipment; identify precast concrete erection safety procedures; interpret precast concrete erection tolerances; and identify precast concrete quality control procedures.

Instruction: Major topics covered in the course are: preconstruction planning; precast concrete erection practices and procedures; precast concrete equipment; precast concrete erection safety procedures; precast concrete erection tolerances; and precast concrete quality control procedures. Methods of instruction for the classroom component include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and tests for each of the units of instruction; for the lab or shop component: skill and safety demonstrations by the instructor, practice by the students while being observed and coached by the instructor, and assessment of the performance of each skill. Evaluation criteria include: successful completion of all course classroom and lab or shop assignments and successful completion of the course knowledge and skill tests.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Precast Safety and Erection (04/05).

Credit Recommendation

Course: Pre-Engineered Metal Buildings

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 45 hours (15 classroom hours and 30 lab or shop hours)

Date(s): January 2000 - Present

Objective: To enable a student to erect pre-engineered metal buildings.

Learning Outcomes: Upon successful completion of this course, the student will be able to: describe pre-engineered metal buildings including the history and trends; unload and store material; erect primary and secondary structural framing systems including girts and purlins; install insulation, wall materials, metal roofing, flashing, gutter, trim and accessories; repair common metal building problems and failures; and re-roof and perform other metal building renovations.

Instruction: Major topics covered in the course are: Introducing pre-engineered metal buildings: history and trends; unloading and storing material; erecting primary structural framing systems; erecting secondary structural framing systems including girts and purlins; installing insulation; installing wall materials; installing metal roofing; installing flashing, gutter, trim and accessories; repairing common metal building problems and failures; and re-roofing and performing other metal building renovations. Methods of instruction for the classroom component include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and tests for each of the units of instruction; for the lab or shop component: skill and safety demonstrations by the instructor, practice by the students while being observed and coached by the instructor, and assessment of the performance of each skill. Evaluation criteria include: successful completion of all course classroom and lab or shop assignments and successful completion of the course knowledge and skill tests.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Pre-engineered Metal Buildings (04/05).

Credit Recommendation

Course: Pre-Engineered Metal Buildings Field Experience

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 500 field experience hours

Date(s): January 2000 - Present

Objective: To enable a student to erect pre-engineered metal buildings.

Learning Outcomes: Upon successful completion of this field experience, the student will be able to: describe pre-engineered metal buildings including the history and trends; unload and store material; erect primary and secondary structural framing systems including girts and purlins; install insulation, wall materials, metal roofing, flashing, gutter, trim and accessories; repair common metal building problems and failures; and re-roof and perform other metal building renovations.

Instruction: Major topics covered in the course are: Introducing pre-engineered metal buildings: history and trends; unloading and storing material; erecting primary structural framing systems; erecting secondary structural framing systems including girts and purlins; installing insulation; installing wall materials; installing metal roofing; installing flashing, gutter, trim and accessories; repairing common metal building problems and failures; and re-roofing and performing other metal building renovations. Methods of instruction include: This is a field experience course required under apprenticeship guidelines and US Department of Labor (DOL) standards. The student will work under the supervision of a foreman as she or he applies the knowledge and skills learned in the classroom. The student will maintain a logbook of knowledge and skills applied in the field. The foreman may provide skill and safety demonstrations and will observe, coach and assess the student's performance. Evaluation criteria include: successful completion of all field experience activities as demonstrated by completion of the logbook.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Field Experience (04/05).

Credit Recommendation

Course: Reinforcing Concrete

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 75 hours (45 classroom hours and 30 lab or shop hours)

Date(s): January 2000 - Present

Objective: To enable a student to reinforce concrete.

Learning Outcomes: Upon successful completion of this course, the student will be able to: understand the history of reinforcing and the manufacturing of reinforcing steel and be able to identify reinforcing tools, ties and safety practices; identify structural forms associated with placing reinforcing steel and demonstrate how to bend, tag, mark and fabricate reinforcing steel; demonstrate how to unload, handle and store reinforcing steel, read engineering and placing drawings, and how to install bar supports; place reinforcing in footings, walls, columns, beams and girders, and in joists and slabs; and describe how to reinforce highway and airport pavement and how to use bar splicing and mechanical couplers.

Instruction: Major topics covered in the course are: History of reinforcing; manufacturing of reinforcing steel; reinforcing tools, ties and safety practices; structural forms associated with reinforcing steel; bridge and highway construction; placing reinforcing steel; bending, tagging, marking and fabricating reinforcing steel; unloading, handling and storing reinforcing steel; reading engineering and placing drawings; installing bar supports; placing reinforcing in footings; placing reinforcing in walls; placing reinforcing in columns; placing reinforcing in beams and girders; placing reinforcing in joists and slabs; highway and airport pavement; and bar splicing and mechanical couplers. Methods of instruction for the classroom component include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and tests for each of the units of instruction; for the lab or shop component: skill and safety demonstrations by the instructor, practice by the students while being observed and coached by the instructor, and assessment of the performance of each skill. Evaluation criteria include: successful completion of all course classroom and lab or shop assignments and successful completion of the course knowledge and skill tests.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 3 semester hours in Reinforced Concrete (04/05).

Credit Recommendation

Course: Reinforcing Concrete Field Experience

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 800 hours (field experience)

Date(s): January 2000 - Present

Objective: To enable a student to reinforce concrete.

Learning Outcomes: Upon successful completion of this field experience course, the student will be able to: understand the history of reinforcing and the manufacturing of reinforcing steel and be able to identify reinforcing tools, ties and safety practices; identify structural forms associated with placing reinforcing steel and demonstrate how to bend, tag, mark and fabricate reinforcing steel; demonstrate how to unload, handle and store reinforcing steel, read engineering and placing drawings, and how to install bar supports; place reinforcing in footings, walls, columns, beams and girders, and in joists and slabs; and describe how to reinforce highway and airport pavement and how to use bar splicing and mechanical couplers.

Instruction: Major topics covered in the course are: History of reinforcing; manufacturing of reinforcing steel; reinforcing tools, ties and safety practices; structural forms associated with reinforcing steel; bridge and highway construction; placing reinforcing steel; bending, tagging, marking and fabricating reinforcing steel; unloading, handling and storing reinforcing steel; reading engineering and placing drawings; installing bar supports; placing reinforcing in footings; placing reinforcing in walls; placing reinforcing in columns; placing reinforcing in beams and girders; placing reinforcing in joists and slabs; highway and airport pavement; and bar splicing and mechanical couplers. Methods of instruction include: This is a field experience course required under apprenticeship guidelines and Department of Labor (DOL) standards. The student will work under the supervision of a foreman as she or he applies the knowledge and skills learned in the classroom. The student will maintain a logbook of knowledge and skills applied in the field. The foreman may provide skill and safety demonstrations and will observe, coach and assess the student's performance. Evaluation criteria include: successful completion of all field experience activities as demonstrated by completion of the logbook.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Field Experience (04/05).

Credit Recommendation

Course: Rigging and Cranes

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 80 hours (40 classroom hours and 40 lab or shop hours)

Date(s): January 2000 - Present

Objective: To enable a student to select and use rigging and to know how to erect and dismantle cranes.

Learning Outcomes: Upon successful completion of this course, the student will be able to: perform rigging using fiber line, wire rope and chains; use rigging hardware, perform reeving, perform rigging using slings, and perform specialized rigging; use miscellaneous rigging equipment, material handling power equipment, and be able to load and unload trucks; describe how to erect and dismantle lattice boom cranes, tower cranes, kangaroo cranes, and erect, operate and dismantle derricks, a Chicago boom, overhead cranes and gantry cranes; and communicate with crane operators.

Instruction: Major topics covered in the course are: Rigging with fiber line; rigging with wire rope; rigging with chains; using rigging hardware; reeving; rigging with slings; specialized rigging; miscellaneous rigging equipment; material handling power equipment; loading and unloading trucks; lattice boom crane; tower crane; kangaroo crane; derricks; Chicago boom; overhead crane; gantry crane; and crane communications. Methods of instruction for the classroom component include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and tests for each of the units of instruction; for the lab or shop component: skill and safety demonstrations by the instructor, practice by the students while being observed and coached by the instructor, and assessment of the performance of each skill. Evaluation criteria include: successful completion of all course classroom and lab or shop assignments and successful completion of the course knowledge and skill tests.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 3 semester hours in Rigging and Crane Operations (04/05).

Credit Recommendation

Course: Rigging and Cranes Field Experience

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 700 hours

Date(s): January 2000 - Present

Objective: To enable a student to select and use rigging and to know how to erect and dismantle cranes.

Learning Outcomes: Upon successful completion of this field experience, the student will be able to: perform rigging using fiber line, wire rope and chains; use rigging hardware, perform reeving, perform rigging using slings, and perform specialized rigging; use miscellaneous rigging equipment, material handling power equipment, and be able to load and unload trucks; describe how to erect and dismantle lattice boom cranes, tower cranes, kangaroo cranes, and erect, operate and dismantle derricks, a Chicago boom, overhead cranes and gantry cranes; and communicate with crane operators.

Instruction: Major topics covered in the course are: Rigging with fiber line; rigging with wire rope; rigging with chains; using rigging hardware; reeving; rigging with slings; specialized rigging; miscellaneous rigging equipment; material handling power equipment; loading and unloading trucks; lattice boom crane; tower crane; kangaroo crane; derricks; Chicago boom; overhead crane; gantry crane; and crane communications. Methods of instruction include: This is a field experience course required under apprenticeship guidelines and Department of Labor (DOL) standards. The student will work under the supervision of a foreman as she or he applies the knowledge and skills learned in the classroom. The student will maintain a logbook of knowledge and skills applied in the field. The foreman may provide skill and safety demonstrations and will observe, coach and assess the student's performance. Evaluation criteria include: successful completion of all field experience activities as demonstrated by completion of the logbook.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Field Experience (04/05).

Credit Recommendation

Course: Rigging and Cranes Field Experience

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 700 hours

Date(s): January 2000 - Present

Objective: To enable a student to select and use rigging and to know how to erect and dismantle cranes.

Learning Outcomes: Upon successful completion of this field experience, the student will be able to: perform rigging using fiber line, wire rope and chains; use rigging hardware, perform reeving, perform rigging using slings, and perform specialized rigging; use miscellaneous rigging equipment, material handling power equipment, and be able to load and unload trucks; describe how to erect and dismantle lattice boom cranes, tower cranes, kangaroo cranes, and erect, operate and dismantle derricks, a Chicago boom, overhead cranes and gantry cranes; and communicate with crane operators.

Instruction: Major topics covered in the course are: Rigging with fiber line; rigging with wire rope; rigging with chains; using rigging hardware; reeving; rigging with slings; specialized rigging; miscellaneous rigging equipment; material handling power equipment; loading and unloading trucks; lattice boom crane; tower crane; kangaroo crane; derricks; Chicago boom; overhead crane; gantry crane; and crane communications. Methods of instruction include: This is a field experience course required under apprenticeship guidelines and Department of Labor (DOL) standards. The student will work under the supervision of a foreman as she or he applies the knowledge and skills learned in the classroom. The student will maintain a logbook of knowledge and skills applied in the field. The foreman may provide skill and safety demonstrations and will observe, coach and assess the student's performance. Evaluation criteria include: successful completion of all field experience activities as demonstrated by completion of the logbook.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Field Experience (04/05).

Credit Recommendation

Course: Safety for Ironworkers

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 42 hours (38 classroom hours and 4 hours-hands on lab or shop)

Date(s): January 2000 - Present

Objective: To enable a student to work safely on construction sites.

Learning Outcomes: Upon successful completion of this course, the student will be able to: apply Occupational Safety and Health Administration (OSHA) guidelines when working on construction sites; erect, use and dismantle scaffolding; apply techniques for fall protection under subpart R standards, multiple lift rigging, structural steel assembly and installation of steel decking; and apply first aid and perform cardiopulmonary resuscitation (CPR).

Instruction: Major topics covered in the course are: OSHA topics include: introduction to OSHA; electrical safety; fall protection; tool safety; scaffold safety; materials handling; personal protective equipment; hazard communication; stairways and ladders; and confined spaces. Scaffolding topics include: erecting scaffolds; using scaffolds; and dismantling scaffolds. OSHA Subpart R topics include: fall protection; multiple lift rigging; structural steel assembly; and installation of steel decking. First aid/CPR topics include: recognizing emergencies; protecting yourself; before providing care; prioritizing care; rescue breathing; cardiac emergencies; sudden illness; wounds; injuries to muscles, bones and joints; and heat- and cold-related emergencies. Methods of instruction for the classroom component include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and tests for each of the units of instruction; for the lab or shop component: skill and safety demonstrations by the instructor, practice by the students while being observed and coached by the instructor, and assessment of the performance of each skill. Evaluation criteria include: successful completion of all course classroom and lab or shop assignments and successful completion of the course knowledge and skill tests.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 2 semester hours in Safety for Ironworkers (04/05).

Credit Recommendation

Course: Structural Steel Erection 1

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 50 hours (30 classroom hours and 20 hours-lab or shop)

Date(s): January 2000 - Present

Objective: To enable a student to erect structural steel.

Learning Outcomes: Upon successful completion of this course, the student will be able to: understand the history and safe erection of structural steel; identify the tools and equipment used in erecting structural steel; and read structural steel drawings; plan and schedule structural steel work; unload handle and store materials; and erect columns and beams.

Instruction: Major topics covered in the course are: History of structural steel, safety and the erection of structural steel; tools and equipment for structural steel erection; reading structural steel drawings; planning and scheduling structural steel work; unloading, handling and storing structural steel materials; erecting columns and beams. Methods of instruction for the classroom component include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and tests for each of the units of instruction; for the lab or shop component: skill and safety demonstrations by the instructor, practice by the students while being observed and coached by the instructor, and assessment of the performance of each skill. Evaluation criteria include: successful completion of all course classroom and lab or shop assignments and successful completion of the course knowledge and skill tests.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 2 semester hours in Basic Structural Erection (04/05).

Credit Recommendation

Course: Structural Steel Erection 2

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 50 hours (30 classroom hours and 20 hours-lab or shop)

Date(s): January 2000 - Present

Objective: To enable a student to erect structural steel.

Learning Outcomes: Upon successful completion of this course, the student will be able to: erect joists, bar joists, joist girders and install bridging; plumb and align structural steel; and bolt up structural steel; weld connections; handle and install metal decking; and detail structural steel; and understand how to erect bridges, towers, clear span and amusement park structures.

Instruction: Major topics covered in the course are: Erecting joists, bar joists, joist girders and installing bridging; plumbing and aligning structural steel; bolting up structural steel welding of connections; handling and installing metal decking; detailing structural steel; erecting bridges; erecting towers; erecting clear span; and erecting amusement park structures. Methods of instruction for the classroom component include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and tests for each of the units of instruction; for the lab or shop component: skill and safety demonstrations by the instructor, practice by the students while being observed and coached by the instructor, and assessment of the performance of each skill. Evaluation criteria include: successful completion of all course classroom and lab or shop assignments and successful completion of the course knowledge and skill tests.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 2 semester hours in Advanced Structural Erection (04/05).

Credit Recommendation

Course: Structural Steel Erection Field Experience

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 1200 hours

Date(s): January 2000 - Present

Objective: To enable a student to erect structural steel.

Learning Outcomes: Upon successful completion of this field experience, the student will be able to: understand the history and safe erection of structural steel; identify the tools and equipment used in erecting structural steel; and read structural steel drawings; plan and schedule structural steel work; unload handle and store materials; and erect columns and beams; erect joists, bar joists, joist girders and install bridging; plumb and align structural steel; and bolt up structural steel; weld connections; handle and install metal decking; and detail structural steel; and understand how to erect bridges, towers, clear span and amusement park structures.

Instruction: Major topics covered in the course are: History of structural steel, safety and the erection of structural steel; tools and equipment for structural steel erection; reading structural steel drawings; planning and scheduling structural steel work; unloading, handling and storing structural steel materials; erecting columns and beams; erecting joists, bar joists, joist girders and installing bridging; plumbing and aligning structural steel; bolting up structural steel welding of connections; handling and installing metal decking; detailing structural steel; erecting bridges; erecting towers; erecting clear span; and erecting amusement park structures. Methods of instruction include: This is a field experience course required under apprenticeship guidelines and Department of Labor (DOL) standards. The student will work under the supervision of a foreman as she or he applies the knowledge and skills learned in the classroom. The student will maintain a logbook of knowledge and skills applied in the field. The foreman may provide skill and safety demonstrations and will observe, coach and assess the student's performance. Evaluation criteria include: successful completion of all field experience activities as demonstrated by completion of the logbook.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 2 semester hours in Field Experience (04/05).

Credit Recommendation

Course: Welding

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 110 hours (30 classroom hours and 80 lab or shop hours)

Date(s): January 2000 - Present

Objective: To enable a student to weld using oxyacetylene, shielded metal arc, flux core arc and gas tungsten arc welding processes.

Learning Outcomes: Upon successful completion of this course, the student will be able to: weld and cut using oxyacetylene; weld using the shielded metal arc welding process; weld using the flux core arc welding process; and weld using the gas tungsten arc welding process.

Instruction: Major topics covered in the course are: Oxyacetylene welding, shielded metal arc welding, flux core arc welding, gas tungsten arc welding, and the structure and types of metals and welding materials (within each type of welding). Methods of instruction for the classroom component include: interactive presentations, in-class and outside assignments, individual and small-group problem practice in the classroom, the use of supporting audiovisuals, and tests for each of the units of instruction; for the lab or shop component: skill and safety demonstrations by the instructor, practice by the students while being observed and coached by the instructor, and assessment of the performance of each skill. Evaluation criteria include: successful completion of all course classroom and lab or shop assignments and successful completion of the course knowledge and skill tests.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 3 semester hours in Applied Welding (04/05).

Credit Recommendation

Course: Welding Field Experience

Location: Atlantic City (350), Camden (399), Springfield (373, 480, 483, 11, 45), and Trenton, NJ (68)

Length: 1200 hours

Date(s): January 2000 - Present

Objective: To enable a student to weld using oxyacetylene, shielded metal arc, flux core arc and gas tungsten arc welding processes.

Learning Outcomes: Upon successful completion of this field experience, the student will be able to: weld and cut using oxyacetylene; weld using the shielded metal arc welding process; weld using the flux core arc welding process; and weld using the gas tungsten arc welding process.

Instruction: Major topics covered in the course are: Oxyacetylene welding, shielded metal arc welding, flux core arc welding, gas tungsten arc welding, and the structure and types of metals and welding materials (within each type of welding). Methods of instruction include: This is a field experience course required under apprenticeship guidelines and Department of Labor (DOL) standards. The student will work under the supervision of a foreman as she or he applies the knowledge and skills learned in the classroom. The student will maintain a logbook of knowledge and skills applied in the field. The foreman may provide skill and safety demonstrations and will observe, coach and assess the student's performance. Evaluation criteria include: successful completion of all field experience activities as demonstrated by completion of the logbook.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 2 semester hours in Field Experience (04/05).