

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

**INTERNATIONAL ASSOCIATION OF HEAT AND FROST
INSULATORS AND ASBESTOS WORKERS
LOCAL 32
870 BROADWAY
NEWARK, NEW JERSEY 07104**

**FEBRUARY 10-11, 2005
and
APRIL 20, 2005**

**Review Conducted By
Thomas Edison State College
Trenton, Newark, NJ Local 32**

INTERNATIONAL ASSOCIATION OF HEAT AND FROST INSULATORS AND ASBESTOS WORKERS

The International Association of Heat and Frost Insulators and Asbestos Workers is a Building Trade Union that has been established for over 100 years. Many building and industrial mechanical systems must operate at a specific temperature range and requires the proper insulation to reduce wasteful valuable and limited energy sources, reduce operating cost and improve the quality of the environment. Through a collective bargaining process, the members of the Insulators' Union perform the highly skilled craft of Mechanical Thermal Insulation. In return the members can receive a career that offers economic stability, proper and safe working conditions and the satisfaction of executing a global need.

This highly trained craft is taught within an Apprenticeship system. The US Department of Labor has this occupation registered as an apprenticeshipable occupation and falls with DOL federal guidelines. The four-year training program is an intense and comprehensive program, training its new members the very specific skilled craft of Mechanical Thermal Insulation.

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, Newark, NJ Local 32 08608-1176, (609) 633-6271; corpinfo@tesc.edu .

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

For

*INTERNATIONAL ASSOCIATION OF HEAT AND FROST
INSULATORS AND ASBESTOS WORKERS*

on

*February 10-11, 2005 &
April 20, 2005*

Review Team Members:

Mr. John Gribbin
Chair, Division of Engineering
Technologies
Essex County College
Newark, Newark, NJ Local 32

Dr. Janet Paulson-Smith
Assistant Professor
Department of Construction
Management
East Carolina University
Greenville, North Carolina

Professor John Wiggins
Program Coordinator, Construction Engineering
Technology
Newark, NJ Local 32 Institute of Technology
Newark, Newark, NJ Local 32

ACE Coordinator:

Mr. Daniel Negrón
Director
Corporate-Higher Education Programs
Thomas Edison State College
Trenton, Newark, NJ Local 32

**INTERNATIONAL ASSOCIATION OF HEAT AND FROST
INSULATORS AND ASBESTOS WORKERS**

**February 10-11, 2005 &
April 20, 2005**

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**INTERNATIONAL ASSOCIATION OF HEAT AND FROST
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Total Courses - 20
Total Credits - 45

Credit Recommendation

Course: Advanced Metal Jacketing I Piping – METL311

Location: Newark, NJ Local 32

Length: 72 hours

Date(s): January 2005 - Present

Objective: To teach the apprentice advanced metal techniques in the area of layout, fabrication and installation of piping protective metal finishes.

Learning Outcomes: Upon successful completion of this course, the student will be able to: layout, fabricate and install protective metal jacketing for various pipe connectors; master the skill of parallel line development and abbreviated versions to develop various types of templates; know how to operate and manage a full service fabrication shop.

Instruction: Major topics covered in the course are: Advanced and alternative layout methods Unequal intersections; Advanced and alternative layout methods Equal intersections; Advanced and alternative layout methods for Elbows at 45° and 90°; Advanced and alternative layout methods Ends of Insulation; Advanced and alternative layout methods of Pipe transitions; Removable Flange Covers; Fabrication Shop Development. Methods of instruction include lecture with PowerPoint presentations and timely discussions, and hands-on activities to reinforce lectures. Evaluation criteria include written exams and graded hands-on projects.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 3 semester hours in Advanced Metal Jacketing I Piping or Weather Barrier Design I – Piping (02/05).

Credit Recommendation

Course: Advanced Metal Jacketing II Equipment – METL312

Location: Newark, NJ Local 32

Length: 76 hours

Date(s): January 2005 - Present

Objective: To teach the apprentice advanced metal techniques in the area of layout, fabrication and installation of equipment protective metal finishes.

Learning Outcomes: Upon successful completion of this course, the student will be able to: layout, fabricate and install protective metal jacketing for various types of equipment; master the skill of parallel line development and abbreviated versions to develop various types of templates; know how to operate and manage a full service fabrication shop.

Instruction: Major topics covered in the course are: Advanced and alternative layout methods Metal Heads Gores; Advanced and alternative layout methods Eccentric and Concentric Heads with and without High Standing Ribs; Advanced and alternative layout methods for Multi Segmented HVAC Ducts and Breechings of Elbows at 45° and 90°; Design and fabrication of Removable Metal Pump Boxes; Design and fabrication of various types of flashings; Techniques and developed skill in Metal Lagging Panels. Methods of instruction include lecture and hands-on exercises. Evaluation criteria include exams and graded projects.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 3 semester hours in Advanced Metal Jacketing II Equipment or Weather Barrier Design II – Equipment (02/05).

Credit Recommendation

Course: Applied Insulators Math II – MATH212

Location: Newark, NJ Local 32

Length: 24 hours

Date(s): January 2005 - Present

Objective: To develop the apprentice to be highly skilled in the application of geometry to design drawings and to develop the necessary arithmetic skills to manage an employer's mechanical insulation inventory decisions and schedules.

Learning Outcomes: Upon successful completion of this course, the student will be able to: be competent and proficient via the 3-step algebraic miter determination formula; become accomplished with geometry to master layout techniques; be skilled at material insulation estimation methods for equipment; comprehend insulation engineering judgments related to energy costs and environmental concerns.

Instruction: Major topics covered in the course are: Use of the 3-step algebraic miter formula; Estimation of insulation material for tanks, vessels, HVAC ducts, boilers and any other insulated mechanic equipment; Use of geometry to master such layout skills as Parallel Line Development, Radial Line Development and Triangulation; Examination and demonstration of the National Insulation Association's 3E Insulation Appraisal Program. Method of instruction includes lecture. Evaluation criteria includes exams.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Basic Geometry or Technical Math (02/05).

Credit Recommendation

Course: Blueprints, Codes and Specifications – ARCH411

Location: Newark, NJ Local 32

Length: 56 hours

Date(s): January 2005

Objective: To have the apprentice understand and develop the skills needed to read and comprehend a set of drawings or “Blueprints.”

Learning Outcomes: Upon successful completion of this course, the student will be able to: locate and identify engineered specifications within a set of plans; locate and identify engineered scaled and un-scaled drawings; order and manage construction materials from a set of plans; increase creditability and communication between the insulation foreman and job-site engineers; identify National Building Codes pertaining to mechanical insulation.

Instruction: Major topics covered in the course are: Determination of the complete scope and parameters of an insulation project; Understanding insulation specifications; Ability to use the scale ruler and drawings; Ability to order insulation materials from drawings; Effectively converse with engineers and job planning sessions; Recognize and research applicable National Building Codes. Methods of instruction include lecture and in-class drawings. Evaluation criteria include exams and graded drawings.

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

Credit Recommendation

Course: Computer Labor Management – COMP501

Location: Newark, NJ Local 32

Length: 16 hours

Date(s): January 2005 - Present

Objective: To give each student some basic instructions on Microsoft Outlook, Microsoft Windows, Microsoft Word and Microsoft Excel, to develop the skills needed to manage and store data for various labor management situations.

Learning Outcomes: Upon successful completion of this course, the student will be able to: identify the need for computers to manage labor workforce in the Insulation field; operate and navigate through Microsoft OUTLOOK; operate and navigate through Microsoft WINDOWS; operate and navigate through Microsoft EXCEL; operate and navigate through Microsoft WORD; develop some Labor-Management applications.

Instruction: Major topics covered in the course are: Computer navigation skills; Development of spreadsheets, management of numerical data; Development of text documents, management of HTML data; Overviews of OUTLOOK, WINDOWS, WORD and EXCEL; Understand the need for labor time management spreadsheets; Understand the need for written labor management reports. Methods of instruction include lecture – interactive computer CD ROM with lecture, discussions, problem solving. Evaluation criteria include written exams-70% passing and student's evaluation of course (Quality Assurance Program Part I).

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Computer Literacy or Introduction to Computers (04/05).

Credit Recommendation

Course: Construction Safety I– SAFE501

Location: Newark, NJ Local 32

Length: 16 hours

Date(s): January 2005 - Present

Objective: To teach and offer apprentice insulation industry-related safety training courses such as the OSHA 10-hour Safety Course with expanded training on Fall Protection and the skills needed to understand the nomenclature of the OSHA Standards.

Learning Outcomes: Upon successful completion of this course, the student will be able to: understand 10 concentrated areas of OSHA safety topics; become fully competent in the wearing and inspection of a full body safety harness used in a Fall Arrest System; read and comprehend the nomenclature of the OSHA 1926 and parts of the 1910 standards; receive the OSHA 10 and SMARK MARK certification cards.

Instruction: Major topics covered in the course are: 10 OSHA topics; Comprehension OSHA nomenclature for OSHA Standards; Use and Inspection of Fall Arrest Systems. Methods of instruction include lecture – PowerPoint presentation with student handbooks, classroom discussions, and laboratory - workshop for hands on demonstrations. Evaluation criteria include exams on all three topics and require a 70% passing grade.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Construction Safety (02/05).

Credit Recommendation

Course: Construction Safety II - SAFE502

Location: Newark, NJ Local 32

Length: 32 hours

Date(s): January 2005 - Present

Objective: To have the student obtain the ability to determine the hazards associated with an end frame scaffold and understand the corrective procedures needed to work on a scaffold and to understand the problem and correct procedures with mold remediation.

Learning Outcomes: Upon successful completion of this course, the student will be able to: recognize scaffolds hazards; falls, electrocution, struck by or collapse; have a comprehensive understanding of the Scaffold OSHA (Subpart L) requirements; interpret regulation with reasonable efficiency to help protect employees from having accidents; interpret scaffold regulations with reasonable efficiency to help protect employers from OSHA citations and/or lawsuits; offer more confidence and creditability on scaffold safety and health issues; instruct students in theory and to become skillful in the work practices of mold remediation.

Instruction: Major topics covered in the course are: OSHA 29 CFR 1926.450; Proper scaffold use; Proper scaffold erection, dismantling, inspection, modification; Competent person responsibilities; Responsiveness and work practices of Mold Remediation. Methods of instruction include classroom lecture with PowerPoint presentation on LCD projector and hands-on exercises. Evaluation criteria includes written exams with a 70% passing grade.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 2 semester hours in Construction Safety II (02/05).

Credit Recommendation

Course: Construction Safety III – SAFE503

Location: Newark, NJ Local 32

Length: 24 hours

Date(s): January 2005 - Present

Objective: To have the student obtain the ability to determine the hazards associated with Permit Required Confined Spaces and understand the corrective measures needed to work in a Confined Space, and to understand the problem and correct procedures with selections and the installation requirements for Firestop and Smoke-seal approved systems.

Learning Outcomes: Upon successful completion of this course, the student will be able to: identify and be acquainted with Confined Spaces; recognize hazards that are associated within a Confined Space; understand correct procedures the work in Confined Spaces; understand the science and the need for Firestop and Smoke-seal systems; selecting the correct Firestop/Smoke-seal system and the correct manufacture installation procedures.

Instruction: Major topics covered in the course are: Permit Required Confined Space Certification; Firestop and Smoke-seal Seal Certification. Methods of instruction include classroom lecture, multi-media presentations types – PowerPoint, DVD. Evaluation criteria includes a written exam.

Credit Recommendation: In the lower division associate/baccalaureate degree category, 1 semester hour in Construction Safety III (02/05).

Credit Recommendation

Course: Disaster Response DSRP502

Location: Newark, NJ Local 32

Length: 16 hours

Date(s): January 2005 – Present

Objective: To give apprentice knowledge and awareness of the safety and health hazards at a natural or man-made disaster site, including CBRNE agents, that may be encountered, as well of the importance of respiratory and other personal protective equipment and proper decontamination procedures that may be used to mitigate the hazards.

Learning Outcomes: Upon successful completion of this course, the student will be able to: recognize characteristics of a disaster site and responsibility of a disaster site worker; support the purpose and use of an Incident Command System; recognize disaster site safety and health hazards, including CBRNE agents; understand the use of proper PPE use on a disaster site; show awareness of effects of and techniques for managing traumatic incident stress; meet the requirements to receive the OSHA #7600 certification for a disaster site worker.

Instruction: Major topics covered in the course are: Characteristics of a disaster site and responsibility of a disaster site worker; The Structure of Incident Command Systems; Disaster site safety and health hazards, including CBRNE agents; Relationship between different types of PPE used and proper use; Application techniques for managing traumatic incident stress; Understanding of different disasters, man-made or nature. Methods of instruction include lecture – print based manuals with practice worksheets, discussions problem solving, interactive DVD. Evaluation criteria include written exams 70% passing and student's evaluation of course (Quality Assurance Program Part I).

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

Credit Recommendation

Course: Effective Supervision – SPVN411

Location: Newark, NJ Local 32

Length: 16 Hours

Date(s): January 2005 - Present

Objective: To have the apprentice understand and develop the skills needed to manage human resources and supervise a labor workforce with productivity and professionalism.

Learning Outcomes: Upon successful completion of this course, the student will be able to: understand the role of the foreman; develop the art of communication; be able to recognize appropriate levels of motivation; advance jobsite organizational skills; recognize leadership skills; have the ability to understand and build teamwork.

Instruction: Major topics covered in the course are: Individual development to become effective in Management/Labor relations; Organizational skills needed manage manpower and jobsite situations in a positive and productive manner; Motivating people to perform at necessary levels. Method of instruction includes classroom lecture. Evaluation criteria includes exams.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Basic Supervision (02/05).

Credit Recommendation

Course: Field Experience I – FDEX101

Location: Newark, NJ Local 32

Length: 2000 hours

Date(s): January 2005 - Present

Objective: To have the apprentice experience an actual worksite to understand and extend the learned concepts from the classroom and to continue education about the Insulation Industry through mentoring with Journey Persons.

Learning Outcomes: Upon successful completion of this course, the student will be able to: understand the application of learned concepts from the classroom; understand and experience general Insulation Industry-Safe practices; learn and understand material management and transportation; understand worksite management by assisting foreman; learn work responsibility of an insulation construction worker; comprehend basic installation and alternative application procedures of insulation products.

Instruction: Major topics covered in the course are: Basic insulation application practice; Basic safety procedures performed; Alternative application procedures; Insulation transportation and management. Methods of instruction include hands-on mentoring/internship. Evaluation criteria include foreman's weekly evaluation of apprentice and apprentice's self evaluation journal entries on learned concepts.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 4 semester hours in Field Experience I (02/05).

Credit Recommendation

Course: Field Experience II – FDEX212

Location: Newark, NJ Local 32

Length: 2000 hours

Date(s): January 2005 - Present

Objective: To have the apprentice experience more advanced responsibilities and broaden the scope of the learned concepts from the classroom and to continue the education about the Insulation Industry through hands-on experience and mentoring Journey Persons.

Learning Outcomes: Upon successful completion of this course, the student will be able to: understand the application of learned concepts from the classroom; understand and experience advanced Insulation Industry-Safe practices; learn and understand material estimation and ordering material; understand worksite management by assisting foreman; become skilled at work responsibility of an insulation construction worker; comprehend advanced installation and alternative application procedures of insulation products.

Instruction: Major topics covered in the course are: Advanced insulation application practice; Advanced safety procedures performed; Alternative application procedures; Insulation estimation and ordering. Methods of instruction include hands-on mentoring/internship. Evaluation criteria include foreman's weekly evaluation of apprentice and apprentice's self evaluation journal entries on learned concepts.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 4 semester hours in Field Experience II (02/05).

Credit Recommendation

Course: Field Experience III – FDEX312

Location: Newark, NJ Local 32

Length: 2000 hours

Date(s): January 2005 - Present

Objective: To have the apprentice experience more advanced responsibilities and broaden the scope of the learned concepts from the classroom and to continue the education about the Insulation Industry through hands-on experience and mentoring journey persons.

Learning Outcomes: Upon successful completion of this course, the student will be able to: understand the application of learned concepts from the classroom; understand and experience advanced Insulation Industry-Safe practices; learn and understand material estimation and ordering material; understand worksite management by assisting foreman; become skilled at work responsibility of an insulation construction worker; comprehend advanced installation and alternative application procedures of insulation products.

Instruction: Major topics covered in the course are: Advanced insulation application practice; Advanced safety procedures performed; Alternative application procedures; Insulation estimation and ordering. Methods of instruction include hands-on mentoring/internship. Evaluation criteria include foreman's weekly evaluation of apprentice and apprentice's self evaluation journal entries on learned concepts.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 4 semester hours in Field Experience III (02/05).

Credit Recommendation

Course: Field Experience IV – FDEX412

Location: Newark, NJ Local 32

Length: 2000 hours

Date(s): January 2005 - Present

Objective: To have the apprentice experience more advanced responsibilities and broaden the scope of the learned concepts from the classroom and to continue the education about the Insulation Industry through hands-on experience and mentoring Journey Persons.

Learning Outcomes: Upon successful completion of this course, the student will be able to: understand the application of learned concepts from the classroom; understand and experience advanced Insulation Industry-Safe practices; learn and understand material estimation and ordering material; understand worksite management by assisting foreman; become skilled at work responsibility of an insulation construction worker; comprehend advanced installation and alternative application procedures of insulation products.

Instruction: Major topics covered in the course are: Advanced insulation application practice; Advanced safety procedures performed; Alternative application procedures; Insulation estimation and ordering. Methods of instruction include hands-on mentoring/internship. Evaluation criteria include foreman's weekly evaluation of apprentice and apprentice's self evaluation journal entries on learned concepts.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 4 semester hours in Field Experience IV (02/05).

Credit Recommendation

Course: Fundamental Insulation I - INSP101

Location: Newark, NJ Local 32

Length: 96 hours

Date(s): January 2005 - Present

Objective: To teach the apprentice the theories and the engineering of reducing heat transfer properties and to learn the application of various types of insulation, finishes and covering to straight pipe, fittings, valves and other connectors.

Learning Outcomes: Upon successful completion of this course, the student will be able to: design and engineer an insulation system to maximize the reduction of heat transfer from operating temperatures from (minus) - 140° F to 2000° F; understand the various types and characteristics of insulation materials; construct and apply insulation materials to all pipe sizes, pipe fittings and connectors; construct and apply insulation protective jacketing and vapor barriers to all pipe sizes and pipe fittings and connectors; understand industry insulation codes and specifications.

Instruction: Major topics covered in the course are: Heat Transfer and Insulation Properties; Materials and Methods of Insulation; Insulate Straight Piping; Insulate Irregular Surfaces; Seal and Finish Insulated Pipe. Methods of instruction include lecture and laboratory. Evaluation criteria include written exams and graded projects, both 70% passing, and student's evaluation of course (Quality Assurance Program Appendix B).

Credit Recommendation: In the lower division baccalaureate/associate degree category, 3 semester hours in Fundamental Insulation I – Piping (02/05).

Credit Recommendation

Course: Fundamental Insulation II Equipment - INSE212

Location: Newark, NJ Local 32

Length: 104 hours

Date(s): January 2005 - Present

Objective: To teach the apprentice the advanced theories and the engineering science of reducing heat transfer and to become skilled at the application of various types of insulation, finishes and covering to HVAC Systems and Mechanical Equipment including Cryogenics.

Learning Outcomes: Upon successful completion of this course, the student will be able to: design and engineer an insulation system to maximize the reduction of heat transfer from operating temperatures from (minus) - 140° F to 2000° F; understand the various types and characteristics of Equipment and Cryogenics insulation materials; construct and apply insulation and protective jacketing materials to tanks, vessels, HVAC duct systems and any other type of mechanical equipment; understand industry insulation codes and specifications for equipment and mechanical equipment.

Instruction: Major topics covered in the course are: Materials/Methods Overview; Cryogenics; Insulate Piping for Underground Service; Insulate Cylindrical Tanks, Vessels, and Equipment; Insulate Air-Handling Systems. Methods of instruction include lecture and hands-on laboratory. Evaluation criteria include written exams and projects completed satisfactorily.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 3 semester hours in Fundamental Insulation II – Equipment (02/05).

Credit Recommendation

Course: Labor History - LABR501

Location: Newark, NJ Local 32

Length: 24 hours

Date(s): January 2005 - Present

Objective: To have the apprentice study the evolution of American labor history and the institutional apprenticeship system to generate a sense of comprehension that will enable the apprentice to understand and motivate the value of union and apprenticeship education.

Learning Outcomes: Upon successful completion of this course, the student will be able to: develop a clear concept of organizing and its effect on the rigorous labor movement; recognize how US labor laws and/or acts developed and how it effected the American labor movement; understand the future of union labor by understanding its past; comprehend purpose to raise the working conditions and wages of non-union construction workers; become conscious of worker issues such as picketing and legal demonstration, unlawful discrimination, sexual harassment and worker complaints.

Instruction: Major topics covered in the course are: Multi-trade Organizing Volunteer Education (MOVE); History of Apprenticeship; History of Unions; History of the Building Trades; History of Labor Law in the United States. Methods of instruction include classroom/multi-media presentations – LCD projector/film study/interactive sessions. Evaluation criteria includes a written exam with 70% required as a passing grade.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 1 semester hour in Labor History (02/05).

Credit Recommendation

Course: Removable Insulation Design – PADS401

Location: Newark, NJ Local 32

Length: 48 hours

Date(s): January 2005 - Present

Objective: To have students design and engineer removable and reusable insulation devices encompassing all insulation specifications and quality considerations.

Learning Outcomes: Upon successful completion of this course, the student will be able to: design and engineer removable and reusable flexible insulation devices that will be applied on: straight piping, ductwork and breechings, elbows – tube turns and field bends, flanges valves, flanges and other assessable connectors, pumps and heat exchangers, power generating turbines, or any irregular shape; comprehend the various types and characteristics of insulation materials, attachment hardware and skins; understand basics concepts of using sewing machines; comprehend the layout and the organization of insulating a turbine; have communication and protocol with off-site fabrication shops.

Instruction: Major topics covered in the course are: How to make removable pads; What materials to use; Making pads that are “User Friendly”; How to use specific tools: pneumatic hog-ring and staple gun and sewing machine and compressors. Methods of instruction include classroom PowerPoint presentations – overheads or projectors and hands-on. Evaluation criteria include graded projects and final exam

Credit Recommendation: In the lower division baccalaureate/associate degree category, 2 semester hours in Removable Insulation Fabrication (02/05).

Credit Recommendation

Course: Supervisor Asbestos Abatement – ASBS501

Location: Newark, NJ Local 32

Length: 40 hours

Date(s): January 2005 - Present

Objective: To instruct and certify the Apprentice in the Supervisor Asbestos Abatement 40-hour course which instructs proper and legal aspects of asbestos abatement procedures, as per federal regulations, including EPA and OSHA Standards.

Learning Outcomes: Upon successful completion of this course, the student will be able to: be certified at Supervisor Asbestos Abatement and Competent Person status; understand safe procedures working in asbestos removal; have a comprehensive perception of legal and contractual asbestos responsibilities; understand respirator protection; recognize asbestos materials and testing protocol.

Instruction: Major topics covered in the course are: Asbestos History, Usage; Legal Laws and Regulation; Health Effects; Abatement Procedures; Disposal; Contractor Responsibilities Insurance, Contracts, Bonds and etc.; Testing and Air Monitoring. Methods of instruction include lecture and lab. Evaluation criteria includes exams.

Credit Recommendation: In the lower division baccalaureate/associate degree category, 2 semester hours in Supervisor Asbestos Abatement (02/05).

Credit Recommendation

Course: Vapor Barriers – VABR101

Location: Newark, NJ Local 32

Length: 16 hours

Date(s): January 2005 - Present

Objective: To understand how condensation affects mechanical insulation and the application of various types and methods of vapor barrier to reduce water vapor transmission through insulation.

Learning Outcomes: Upon successful completion of this course, the student will be able to: identify the need for a Vapor Barrier; understand the characteristics and types of materials used; recognize correct and incorrect application techniques; offer assistance to engineers designing a complete vapor barrier system.

Instruction: Major topics covered in the course are: Science of water vapor transmission through mechanical insulation; Comprehensive description of materials used; Relationship between weather barriers and vapor barriers; Application techniques through various material types; Inspection and maintenance of barrier after initial installation. Methods of instruction include lecture – print based manuals, discussions problem solving. Evaluation criteria include written exams 70% passing and student's evaluation of course (Quality Assurance Program Part I).

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