

CONCRETE I

COURSE DESCRIPTION

Concrete I is a course that will introduce students to basic skills and knowledge related to reinforced concrete construction in residential and commercial structures. Topics covered include safe practices; drawing interpretation; composition of concrete; principles of reinforcement; form construction; load analysis; and placing, curing, and testing concrete. This course gives students an introduction to the skill and knowledge base typically required for apprentice concrete artisan.

It is strongly recommended that administration and guidance follow the scope and sequence and course recommendations as listed.

Recommended:	Core Construction Algebra I
Recommended Credits:	1
Recommended Grade Level(s):	10 th 11 th 12 th
Number of Competencies in Course:	65

CONCRETE I

STANDARDS

- 1.0** Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and workplace.
- 2.0** Students will take personal responsibility for the safety of themselves, their coworkers, and bystanders.
- 3.0** Introduction to Concrete: Define terms, explain the concrete process, identify composition and characteristics of concrete, identify uses of concrete in building, explain career opportunities.
- 4.0** Concrete Safety: Describe safety gear, appropriate dress, safety precautions to follow. Handle and maintain concrete tools safely.
- 5.0** Properties of concrete: Describe properties of concrete, determine how ingredients influence concrete, describe quality control tests, mix a batch, perform a slump test.
- 6.0** Tools and equipment: Name and describe tools and equipment used. Associate trade terms.
- 7.0** Preparing for placement: Describe site layout; locate, grade, and build forms; perform compaction activities; describe and use joints and reinforcements; describe information needed when ordering concrete.
- 8.0** Placing Concrete: Describe how concrete is conveyed and placed; draw up a pre-placement checklist; describe the use of tools and equipment for placing concrete; describe depositing, spreading, consolidating, and striking off. Associate trade terms.
- 9.0** Finishing: Describe finishing, demonstrate the use of tools for finishing, mark and cut joints, apply various finishes, associate trade terms.
- 10.0** Curing and Protecting: Describe the process for curing and protecting concrete, and identify methods. Describe when each method is applied. Associate trade terms.
- 11.0** Introduction to Troubleshooting: Describe the methodology for troubleshooting, identify problems and preventions, identify concrete defects.

CONCRETE I

STANDARD 1.0

Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and workplace.

LEARNING EXPECTATIONS

The student will:

- 1.1** Cultivate leadership skills.
- 1.2** Participate in SkillsUSA as an integral part of instruction.
- 1.3** Assess situations within the school, community, and workplace and apply values to develop and select solutions.
- 1.4** Demonstrate the ability to work cooperatively with others.
- 1.5** Exhibit integrity and pride in the practice and quality of work.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 1.1A** Takes initiative in meetings to actively influence the results of deliberations.
- 1.1B** Uses critical-thinking and consensus building skills in group deliberations.
- 1.2A** Applies high ethical standards to personal, community, and professional situations.
- 1.2B** Participates and conducts meetings according to accepted rules of parliamentary procedure.
- 1.3A** Analyzes simulated workplace situations and uses problem-solving and critical-thinking techniques to suggest solutions the problem.
- 1.3B** Analyzes socio-economic conflicts associated with the construction industry and applies values to evaluate possible ways to mitigate the conflicts.
- 1.4A** Participates in a committee.
- 1.4B** Contributes to a group project.
- 1.5** Exhibits integrity and pride in the practice and quality of work.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Create a leadership inventory and use it to conduct a personal assessment.
- Participate in various SkillsUSA or similar programs and/or competitive events.
- Evaluate a civic project within the school, community, and/or workplace and evaluate the expected long term effects of the project.
- Prepare a meeting agenda for a school or community meeting.
- Attend the meeting of a professional organization.
- Participate in a design team to complete an assigned project.

INTEGRATION LINKAGES

SkillsUSA *Professional Development Program* (PDP), SkillsUSA, Communication and Writing Skills, Teambuilding Skills, Research, Language Arts, Sociology, Psychology, Algebra, Geometry, English, Social Studies, Problem Solving, Interpersonal Skills, Employability Skills, Critical-Thinking Skills, SCANS (Secretary's Commission on Achieving Necessary Skills), Chamber of Commerce, Colleges, Universities, Technology Centers, and Employment Agencies, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education Research (NCCER), United States Department of Labor, United States Department of Labor *Dictionary of Occupational Titles*, Tennessee Department of Labor and Workforce Development

CONCRETE I

STANDARD 2.0

Students will take personal responsibility for the safety of themselves, their coworkers, and bystanders.

LEARNING EXPECTATIONS

The student will:

- 2.1** Demonstrate a positive attitude regarding safety practices and issues.
- 2.2** Use and inspect personal protective equipment.
- 2.3** Inspect, maintain, and employ safe operating procedures with tools and equipment, such as hand and power tools, ladders, scaffolding, and lifting equipment.
- 2.4** Continuously respond to potential hazards to self and others.
- 2.5** Assume personal responsibilities under HazCom (Hazard Communication) regulations.
- 2.6** Assume responsibilities, regulations, and Occupational Safety and Health Administration (OSHA) policies to protect coworkers and bystanders from hazards.
- 2.7** Adhere to responsibilities, regulations, and Occupational Safety and Health Administration (OSHA) policies regarding reporting of accidents and observed hazards, and regarding emergency response procedures.
- 2.8** Demonstrate appropriate related safety procedures.
- 2.9** Pass with 100% accuracy a written examination relating specifically to safety issues.
- 2.10** Pass with 100% accuracy a performance examination relating specifically to tools and equipment.
- 2.11** Maintain a portfolio record of written safety examinations and equipment examinations for which the student has passed an operational checkout by the instructor.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 2.1A** Is attentive during safety discussions.
- 2.1B** Actively seeks information about safe procedures.
- 2.1C** Responds positively to instruction, advice, and correction regarding safety issues.
- 2.1D** Does not deliberately create or increase hazards, such as by horseplay, practical jokes, or creating distractions.
- 2.1E** Reports to school or work physically ready to perform to professional standards, such as rested, or not impaired by medications, drugs, or alcohol.
- 2.2** Selects, inspects, and uses the correct personal protective equipment for the assigned task.
- 2.3A** Inspects power tools for intact guards, shields, insulation, and other protective devices.
- 2.3B** Inspects extension cords for the presence of a functional ground connection prior to use.
- 2.3C** Operates and maintains tools in accordance with manufacturer's instructions and as required by regulation or company policy.
- 2.3D** Properly places and secures ladders and scaffolding prior to use.
- 2.4A** Is observant of personnel and activities in the vicinity of the work area.

- 2.4B** Warns nearby personnel, prior to starting potentially hazardous actions.
- 2.5A** When tasked to use a new hazardous material, retrieves MSDS, (material safety data sheets) and identifies the health hazards associated with the new material.
- 2.5B** Reports hazards found on the job site to the supervisor.
- 2.6A** Erects shields, barriers, and signage to protect coworkers and bystanders prior to starting potentially hazardous tasks.
- 2.6B** Provides and activates adequate ventilation equipment as required by the task.
- 2.7A** Reports all injuries to self to the immediate supervisor.
- 2.7B** Reports observed unguarded hazards to the immediate supervisor.
- 2.8** Complies with personal assignments regarding emergency assignments.
- 2.9** Pass with 100% accuracy a written examination relating specifically to safety issues.
- 2.10** Pass with 100% accuracy a performance examination relating specifically to tools and equipment.
- 2.11** Maintains a portfolio record of written safety examinations and equipment examinations for which the student has passed an operational checkout by the instructor.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Practice drill simulating a hazardous solvent spill in which an emergency action plan is to be implemented.
- Instruct a visitor to obviously approach the vicinity of a student conducting a hazardous activity, and note the level of awareness demonstrated by the student.
- For a project requiring the use of ladders and/or scaffolding, note the proper placement and securing procedures followed by students.
- Conduct a safety and health inspection and identify any potential hazards.
- List causes of most common accidents and outlines a safety prevention program.
- Participate in the Occupational Health and Safety competitions with SkillsUSA.
- Outline a safety management program.
- Role-play proper procedure for treating burns, cuts, electrical shock treatments according to standards set forth by the American Red Cross.
- Obtain an American Red Cross First Aid Certification and/or CPR Certification.
- Select, inspect, and use the correct personal protective equipment for the assigned task.
- Inspect power tools for intact guards, shields, insulation, and other protective devices.
- Inspect extension cords for the presence of a functional ground connection prior to use.

INTEGRATION LINKAGES

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, Algebra, Geometry, English, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education Research (NCCER), Occupation Safety and Health Administration (OSHA), Power Tool Institute (PTI), Environmental Protection Agency (EPA), United States Department of Labor, Tennessee Department of Labor and Workforce Development

CONCRETE I

STANDARD 3.0

Introduction to Concrete: Define terms, explain the concrete process, identify composition and characteristics of concrete, identify uses of concrete in building, explain career opportunities.

LEARNING EXPECTATIONS

The student will:

- 3.1 Define terms associated with concrete construction.
- 3.2 Identify the composition and characteristics of concrete.
- 3.3 Identify the uses of concrete as a building material.
- 3.4 Identify the effect of artisanship on finished concrete.
- 3.5 Explain the concrete construction process.
- 3.6 Identify site operation work requirements.
- 3.7 Explain the career potential in concrete construction and finishing.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

This is a knowledge based module, there is no performance testing. Written test with a passing score will indicate learning expectations are met.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Using the Internet, students will do a research paper on careers in concrete.
- Contact MTSU and have them send you information on their concrete management program.

INTEGRATION LINKAGES

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, Algebra, Geometry, English, Secretary's Commission on Achieving Necessary Skills (SCANS), Skills USA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

CONCRETE I

STANDARD 4.0

Concrete Safety: Describe safety gear, appropriate dress, safety precautions to follow. Handle and maintain concrete tools safely.

LEARNING EXPECTATIONS

The student will:

- 4.1** Describe and wear different types of safety gear for the work site.
- 4.2** State the guidelines for dressing appropriately for concrete work.
- 4.3** Describe how to safely handle concrete when forming, placing, curing, and finishing.
- 4.4** Describe safety precautions to follow when working in extreme heat or cold.
- 4.5** Describe safety precautions to follow when working with hazardous materials.
- 4.6** Describe proper procedures for handling and maintaining concrete construction tools safely.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 4.1A** Lays out, inspects, and puts on a safety harness with necessary strap adjustments.
- 4.1B** Checks operation of respirators, places on face, and adjusts properly.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Create a situation so students can follow safety procedures when working with hazardous materials.
- Have student handle concrete in a safe manner.

INTEGRATION LINKAGES

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, Algebra, Geometry, English, Secretary's Commission on Achieving Necessary Skills (SCANS), Skills USA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

CONCRETE I

STANDARD 5.0

Properties of Concrete: Describe properties of concrete, determine how ingredients influence concrete, describe quality control tests, mix a batch, perform a slump test.

LEARNING EXPECTATIONS

The student will:

- 5.1 Mix a test batch of concrete.
- 5.2 Perform a slump test.
- 5.3 Describe the properties of concrete.
- 5.4 Explain how the properties of concrete are used in construction.
- 5.5 Determine how the ingredients of concrete influence mix, placement, finishing, durability, and performance.
- 5.6 Describe the quality-control tests on concrete ingredients, fresh concrete, and hardened concrete.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 5.1 Mixes a test batch of concrete.
- 5.2 Performs a slump test.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Have local concrete company come in and show mixing and slump testing of concrete.
- Take students to a job site where concrete is being poured.

INTEGRATION LINKAGES

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, Algebra, Geometry, English, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

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STANDARD 6.0

Tools and equipment: Name and describe tools and equipment used. Associate trade terms.

LEARNING EXPECTATIONS

The student will:

- 6.1** Name the tools used in placing and finishing concrete.
- 6.2** Name the power equipment used in placing and finishing concrete.
- 6.3** Describe how each tool is used.
- 6.4** Describe how the power equipment is used.
- 6.5** Associate trade terms with the appropriate tools and equipment.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 6.1** Identifies selected hand tools and their components.
- 6.2** Identifies selected power tools and equipment.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Have each student verbally identify each tool and state its use.

INTEGRATION LINKAGES

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, Algebra, Geometry, English, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

CONCRETE I

STANDARD 7.0

Preparing for Placement: Describe site layout; locate, grade and build forms; perform compaction activities; describe and use joints and reinforcements; describe information needed when ordering concrete.

LEARNING EXPECTATIONS

The student will:

- 7.1** Describe basic site layout using levels and measuring tools.
- 7.2** Properly locate, grade, and build forms for horizontal placement.
- 7.3** Perform compaction activities on subgrades.
- 7.4** Describe various joints and where to locate them.
- 7.5** Describe various reinforcements and how to place them.
- 7.6** Describe information needed when ordering concrete.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 7.1** Sets a batter board.
- 7.2A** Locates and levels a form.
- 7.2B** Builds a slab form to grade with dimension lumber.
- 7.3** Compacts subgrade with a shovel and come-along.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Take students out on the school campus and erect batter boards.

INTEGRATION LINKAGES

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, Algebra, Geometry, English, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development, Power Tool Institute (PTI)

CONCRETE I

STANDARD 8.0

Placing Concrete: Describe how concrete is conveyed and placed; draw up a pre-placement checklist, describe the use of tools and equipment for placing concrete; describe depositing, spreading, consolidating, and striking off. Associate trade terms.

LEARNING EXPECTATIONS

The student will:

- 8.1** Demonstrate the use of equipment and tools for placing concrete.
- 8.2** Demonstrate the process of depositing, spreading, consolidating, and striking off concrete in a form.
- 8.3** Describe how concrete is conveyed and placed.
- 8.4** Draw up a pre-placement checklist.
- 8.5** Associate trade terms with the appropriate process and equipment.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 8.1** Place concrete using a wheelbarrow, square-end shovel, and come-along.
- 8.2A** Consolidate placed concrete using spading and a poker vibrator.
- 8.2B** Strike off placed concrete using a manual screed.
- 8.2C** Float concrete after striking off.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Build a small form and have students screed and float their form.

INTEGRATION LINKAGES

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, Algebra, Geometry, English, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development, International Concrete Repair Institute (ICRI)

CONCRETE I

STANDARD 9.0

Finishing: Describe finishing, demonstrate use of tools for finishing, mark and cut joints, apply various finishes, and associate trade terms.

LEARNING EXPECTATIONS

The student will:

- 9.1 Describe the basic finishing process.
- 9.2 Use the following finishing hand tools: float, edger, groovier, and trowel.
- 9.3 Mark and cut joints with a saw.
- 9.4 Apply a broom finish
- 9.5 Apply a rubbing finish.
- 9.6 Associate trade terms with the appropriate processes and equipment.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 9.2 Hand float edge, groove, and trowel a 4x4 foot concrete slab.
- 9.3 Mark joints and cut them with a power saw.
- 9.4 Apply a broom finish to a slab
- 9.5 Apply a rubbing finish to a slab.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Take students to a job site and have them observe concrete work being done.
- Advertise to do simple concrete projects for the school or community.

INTEGRATION LINKAGES

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, Algebra, Geometry, English, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

CONCRETE I

STANDARD 10.0

Curing and Protecting: Describe the process for curing and protecting concrete and identify methods. Describe when each method is applied and associate trade terms..

LEARNING EXPECTATIONS

The student will:

- 10.1** Describe the process of curing concrete
- 10.2** Identify methods of curing concrete.
- 10.3** Describe how each method is used.
- 10.4** Identify when each method is used.
- 10.5** Associate trade terms with the appropriate processes and equipment.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 10.2** Spray a compound in a systematic total-coverage pattern over a marked slab surface.
- 10.4** Cover a marked wet slab surface with plastic sheeting, sealed and wrinkle free.

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Using a pored slab perform different drying methods.
- Under different conditions perform curing and drying methods.
- Take students to a job site and have them discuss the methods being used to dry or cure the concrete

INTEGRATION LINKAGES

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, Algebra, Geometry, English, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

CONCRETE I

STANDARD 11.0

Introduction to Troubleshooting: Describe the methodology for troubleshooting, identify problems and preventions, identify concrete defects.

LEARNING EXPECTATIONS

The student will:

- 11.1** Describe a basic troubleshooting methodology that can be used to identify a variety of concrete construction problems and their causes.
- 11.2** Identify problems with fresh concrete and describe ways to prevent them..
- 11.3** Identify different concrete defects such as cracking, crazing, dusting, scaling, popouts, and efflorescence, and describe ways to prevent them.

PERFORMANCE INDICATORS: EVIDENCE STANDARD IS MET

The student:

- 11.2** Distinguish 10 different types of concrete problems from photographs.(Sample photos are provided in the instructors guide).

SAMPLE PERFORMANCE TASKS

These are sample projects of the type and scale recommended to address one or more of the learning expectations for this standard. Other projects can be used at the instructor's discretion.

- Using photos, students will identify defects.
- Using the Internet, students will identify common concrete defects.

INTEGRATION LINKAGES

Science, Computer Skills, Research and Writing Skills, Language Arts, Communication Skills, Leadership Skills, Teamwork Skills, Algebra, Geometry, English, Secretary's Commission on Achieving Necessary Skills (SCANS), SkillsUSA, Associated Builders and Contractors (ABC), Associated General Contractors (AGC), MAVCC, National Center for Construction Education and Research (NCCER), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency, United States Department of Labor, Tennessee Department of Labor and Workforce Development

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SAMPLING OF AVAILABLE RESOURCES

- *Core Curriculum*, National Center for Construction Education and Research (NCCER), Prentice Hall, Upper Saddle River, NJ; ©2000. Also known as the “Wheels of Learning” materials.
- *Concrete Finishing Level One*, Prentice National Center for Construction Education and Research (NCCER), Hall, Upper Saddle River, NJ; ©1998. Also known as the “Wheels of Learning” materials.
- *Concrete Finishing Level Two*, National Center for Construction Education and Research (NCCER), Prentice Hall, Upper Saddle River, NJ; ©1999. Also known as the “Wheels of Learning” materials.
- *Introduction to Concrete Finishing*, MAVCC, Oklahoma Department of Vocational and Technical Education
- *Introduction to Concrete Reinforcing*, MAVCC, Oklahoma Department of Vocational and Technical Education
- *Concrete and Cement Masonry, Year I*, MAVCC, Oklahoma Department of Vocational and Technical Education
- *Creating with Concrete: Yard Art, Sculpture and Garden Projects*, Sherri Warner Hunter, Lark Books, 2001.
- *Concrete Construction Handbook*, Joseph A. Dobrowolski, McGraw-Hill Professional Book Group, June 1998.
- *Construction Manual: Concrete and Formwork*, T. W. Love, Craftsman Book Company, October 1979.
- *Concrete, Masonry and Brickwork: A Practical Handbook for the Home Owner and Small Builder*, U. S. Department of the Army, Dover Publications, Inc., August 1999.
- *Concrete Construction and Estimating*, Craig Avery, Craftsman Book Company, November 1983.
- *Foundations and Concrete Work*, Editors of Fine Homebuilding, Taunton Press, Inc., December 2001.
- *Formwork for Concrete Structures*, Robert L. Peurifoy, Garold D. Oberlender, McGraw-Hill Professional Book Group, October 1995.
- *Masonry and Concrete*, C. Beall, McGraw-Hill Professional Book Group, August 2000.

- *Concrete Repair and Maintenance Illustrated: Problem Analysis, Repair Strategy, Techniques*, Peter Emmons and Brandon W. Emmons, A Construction Means Data Group Company, July 1992.
- *Modern Masonry*, Clois E. Kicklighter, Goodheart-Willcox, 2003
- American Concrete Institute International, <http://www.aci-int.org/>
- American Society for Testing and Materials, <http://www.astm.org/>
- Building Officials and Code Administrators International, <http://www.bocai.org/index.html>
- Concrete Masonry Online, National Concrete Masonry Association, www.ncma.org
- International Concrete Repair Institute, <http://www.icri.org/>
- Portland Cement Association, <http://www.portcement.org/index.asp>
- National Lime Association, <http://www.lime.org/>
- The Concrete Source, <http://www.concretenetwork.com/>
See their web page for additional resources:
<http://www.concretenetwork.com/links/organizations.htm>