Revised: 1/14/2014

2014 Course Sequencing for NCCER Programs

In response to many requests for a simplified course sequencing system and to clarify minimum NCCER credentialing requirements the following course sequences have been approved for use beginning 2014-2015.

They are the result of:

- Industry input, recommendations, and development in concert with nationally recognized associations.
- The need to provide a competency-based system designed to keep students in school and moving toward graduation.
- The need to establish a statewide "baseline" for student achievement.
- The need to provide all students with foundational skills applicable to various pathways.
- The difficulties and uncertainty in scheduling sequenced courses.
- The best practices observed during NCCER reviews.
- The requests from teachers and administrators to better organize Alabama curriculum.
- The need to ensure that foundational competencies are not overlooked.
- The threat to student mastery, credentialing, and program credibility from shortened contact time.

Note key elements of the following example:

Course Title: NCCER Carpentry 1…. *(You may call it what you choose for marketing at your LEA but note the 1.2.3 sequence. Welding has 4 courses for the sake of the time needed for mastery)*
Course # 432301…. *(This is the new number you will look for in STI)*
Description:
This is the first of 3 required one-credit courses in the Carpentry pathway. It is designed to complete all core requirements for NCCER Core credentialing and to provide students with fundamental knowledge and skills emphasizing use of hand and power tools, building materials, fasteners, adhesives, and flooring systems needed for NCCER Carpentry Level I Credentialing.
Recommended Safe Enrollment: 20 - Cohort of Year 1 Students only…. *(In response to safety and Industry recommendations. Teachers also report that they can handle larger classes this way)*
Recommended Hours of Instruction: 140 – 160…. *(The mastery of skills requires time on task. The number of contact hours for 1 credit courses varies widely around the state. This 3 course sequence is needed to protect program credibility)*
Prerequisite: Appropriate 4-year plan and Career Interest documentation. …. *(For the first course of all programs this is to comply with the latest policy regarding appropriate placement of students. The next course follow in sequence)*

Implementation:

Work closely with your counselors to ensure they understand their role.

Empower teachers to reassign students to appropriate classes.

Understand that student numbers may be impacted at first but once established your teachers will be able to better serve larger classes.

Consider having students take related courses if the course they need or want is not available that semester, e.g., an electrical student will be well served to take a drafting class. A welding student could benefit from taking a machining course. This approach keeps students on your campus and exposes them to new opportunities.

Cluster: Architecture & Construction
Pathway: Construction
Program: Building Construction

Course Title: NCCER Building Construction 1 – Construction Framing
Course # 412101
A one-credit course designed to complete all core requirements for NCCER Core Credentialing and to facilitate students' understanding of the framing components of typical structures. Emphasis is placed on safety, floor systems, wall and ceiling framing, stair construction, and roof framing.
Recommended Safe Enrollment: 20 - Cohort of Year 1 Students only
Recommended Hours of Instruction: 140 – 160
Prerequisite: Appropriate 4-year plan and Career Interest documentation.
Low Grade: 9th
High Grade: 12th
STI Short Name: Building Construction 1
STI Long Name: NCCER Building Construction 1 – Construction Framing
Credit: 1
Begin Service Year: 2014-2015

Course Title: NCCER Building Construction 2 – Site Preparation
Course # 412102
A one-credit course designed to facilitate students' understanding of the first phases of construction including types of structures and their uses. This course meets partial requirements for NCCER Construction Technology credentials.
Recommended Maximum Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: Building Construction 1 and teacher recommendation
Low Grade: 9th
High Grade: 12th
STI Short Name: Building Construction 2
STI Long Name: NCCER Building Construction 2 – Site Preparation
Credit: 1
Begin Service Year: 2014-2015

Course Title: NCCER Building Construction 3 – Construction Finishing
Course # 412103
Description:
A one-credit course designed to provide instruction on all common exterior and interior finishing phases of a structure. This course meets partial requirements for NCCER Construction Technology credentials.
Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: Building Construction 1 and teacher recommendation
Low Grade: 9th
High Grade: 12th
STI Short Name: Building Construction 3
STI Long Name: NCCER Building Construction 3 – Construction Finishing
Credit: 1
Begin Service Year: 2014-2015

Revised: 1/14/2014

Cluster: Architecture & Construction
Pathway: Construction
Program: Carpentry

Course Title: NCCER Carpentry 1
Course # 432301
Description:
This is the first of three required one-credit courses in the Carpentry pathway. It is designed to complete all core requirements for NCCER Core Credentialing and to provide students with fundamental knowledge and skills emphasizing use of hand and power tools, building materials, fasteners, adhesives, and flooring systems needed for NCCER Carpentry Level I Credentialing.
Recommended Safe Enrollment: 20 - Cohort of Year 1 Students only
Recommended Hours of Instruction: 140 – 160
Prerequisite: Appropriate 4-year plan and Career Interest documentation.
Low Grade: 9th
High Grade: 12th
STI Short Name: Carpentry I
STI Long Name: NCCER Carpentry 1
Credit: 1
Begin Service Year: 2014-2015

Course Title: NCCER Carpentry 2
Course # 432302
Description:
A one-credit course designed to provide students with advanced knowledge and skills emphasizing floor, wall, ceiling, and basic construction layout needed for NCCER Carpentry Level I Credentialing.
Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: Prerequisite is Carpentry 1 and teacher recommendation
Low Grade: 9th
High Grade: 12th
STI Short Name: Carpentry 2
STI Long Name: NCCER Carpentry 2
Credit: 1
Begin Service Year: 2014-2015

Course Title: NCCER Carpentry 3
Course # 432303
A one-credit course designed to provide students with advanced knowledge, skills, and practice emphasizing wall, ceiling, and roof framing, windows, entrance doors, and stair layout needed for NCCER Carpentry Level I Credentialing.
Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: NCCER Carpentry 2 and teacher recommendation
Low Grade: 9th
High Grade: 12th
STI Short Name: Carpentry 3
STI Long Name: NCCER Carpentry 3
Credit: 1
Begin Service Year: 2014-2015

Revised: 1/14/2014

Cluster: Architecture & Construction
Pathway: Construction
Program: Masonry

Course Title: NCCER Masonry 1
Course # 432701

This is the first of three required one-credit courses in the Masonry pathway. It is designed to complete all core requirements for NCCER Core credentialing and to provide students with fundamental knowledge and skills emphasizing safety, tools, measuring, blueprint reading and layout, and basic block and brick construction techniques leading to NCCER Masonry Level I Credentialing.

Recommended Safe Enrollment: 20 - Cohort of Year 1 Students only
Recommended Hours of Instruction: 140 – 160
Prerequisite: Appropriate 4-year plan and Career Interest documentation.
Low Grade: 9th
High Grade: 12th
STI Short Name: Masonry 1
STI Long Name: NCCER Masonry 1
Credit: 1
Begin Service Year: 2014-2015

Course Title: NCCER Masonry 2
Course # 432702

This is the second of three required one-credit courses in the Masonry pathway. It is designed to provide students with practice and skills development emphasizing safety, applications and intermediate block and brick construction techniques leading to NCCER Masonry Level I Credentialing.

Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: NCCER Masonry 1 and teacher recommendation
Low Grade: 9th
High Grade: 12th
STI Short Name: Masonry 2
STI Long Name: NCCER Masonry 2
Credit: 1
Begin Service Year: 2014-2015

Course Title: NCCER Masonry 3
Course # 432703

This is the third of three required one-credit courses in the Masonry pathway. It is designed to provide students with practice and skills development emphasizing safety, applications and advanced block and brick construction techniques leading to NCCER Masonry Level I Credentialing.

Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: NCCER Masonry 2 and teacher recommendation
Low Grade: 9th
High Grade: 12th
STI Short Name: Masonry 3
STI Long Name: NCCER Masonry 3
Credit: 1
Begin Service Year: 2014-2015

Revised: 1/14/2014

Cluster: Architecture & Construction
Pathway: Construction
Program: Electrical Technologies

Course Title: NCCER Electrical Technologies 1
Course # 432501
Description:
This is the first of three required one-credit courses in the Electrical Technologies Pathway. It is designed to complete all core requirements for NCCER Core Credentialing and to provide students with fundamental knowledge and skills emphasizing use of hand tools, power tools, and electrical theory which are utilized in the construction industry and required for NCCER Electrical Level I Credentialing.
Recommended Safe Enrollment: 20 - Cohort of Year 1 Students only
Recommended Hours of Instruction: 140 – 160
Prerequisite: Student should have appropriate 4-year plan and Career Interest documentation.
Low Grade: 9th
High Grade: 12th
STI Short Name: Electrical Technologies 1
STI Long Name: NCCER Electrical Technologies 1
Credit: 1
Begin Service Year: 2014-2015

Course Title: NCCER Electrical Technologies 2
Course # 432502
This is the second of three required one-credit courses in the Electrical Technologies pathway. It is designed to provide students with theory, practice, and skills development. Emphasis is placed on fundamental knowledge and skills in basic wiring, understanding circuitry, performing basic wiring patterns, and using the National Electric Code (NEC) leading to NCCER Electrical Level I Credentialing.
Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: NCCER Electrical Technologies 1 and teacher recommendation
Low Grade: 9th
High Grade: 12th
STI Short Name: Electrical Technologies 2
STI Long Name: NCCER Electrical Technologies 2
Credit: 1
Begin Service Year: 2014-2015

Course Title: NCCER Electrical Technologies 3
Course # 432503
This is the third of three required one-credit courses in the Electrical Technologies pathway. It is designed to provide students with theory, practice, and skills development. Emphasis is placed on application and skills in intermediate wiring, circuitry, wiring patterns, and using the National Electric Code (NEC) leading to the NCCER Electrical Level I Credential.
Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: Electrical Technologies 2 and teacher recommendation
Low Grade: 9th
High Grade: 12th
STI Short Name: Electrical Technologies 3
STI Long Name: NCCER Electrical Technologies 3
Credit: 1
Begin Service Year: 2014-2015

Cluster: Architecture & Construction
Pathway: Construction
Program: Welding

Course Title: NCCER Welding 1
Course # 432901

This is the first of four required one-credit courses in the Welding Technologies Pathway. It is designed to complete all core requirements for NCCER Core Credentialing and to provide students with fundamental knowledge and skills emphasizing use of hand tools, power tools, welding theory and practices which are utilized in the manufacturing and construction industry. This entry-level course is required for NCCER Welding Level I Credentialing and may be taken as one of the optional technical courses with credit applied to the Industrial Maintenance Technology area.

Recommended Safe Enrollment: 20 - Cohort of Year 1 Students only
Recommended Hours of Instruction: 140 – 160
Prerequisite: Student should have appropriate 4-year plan and Career Interest documentation.
Low Grade: 9th
High Grade: 12th
STI Short Name: Welding 1
STI Long Name: NCCER Welding 1
Credit: 1
Begin Service Year: 2014-2015

Course Title: NCCER Welding 2
Course # 432902

This is the second of four required one-credit courses in the welding Technologies pathway. Topics include: basic shielded metal arc welding, blueprint reading, weld symbols, joint identification, and print reading. Emphasis is placed on fundamental knowledge, guided practice, and NCCER Welding Level I requirements.

Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: NCCER Welding 1 and teacher recommendation
Low Grade: 9th
High Grade: 12th
STI Short Name: Welding 2
STI Long Name: NCCER Welding 2
Credit: 1
Begin Service Year: 2014-2015

Course Title: NCCER Welding 3
Course # 432903

This is the third of four required one-credit courses in the Welding Technologies pathway. It is designed to provide students with theory, practice, and skills development. Emphasis is placed on application and operation of shielded metal arc welding, (SMAW) equipment in the vertical, 3-F and overhead, 4-F positions leading to NCCER Welding Level I Credentialing.

Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: NCCER Welding 2 and teacher recommendation
Low Grade: 9th
High Grade: 12th
STI Short Name: Welding 3
STI Long Name: NCCER Welding 3
Credit: 1
Begin Service Year: 2014-2015

Revised: 1/14/2014

Course Title: NCCER Welding 4
Course # 432904

This is the fourth of four required one-credit courses in the Welding Technologies pathway. It is designed to provide students with additional practice and skills development. Emphasis is placed on application and operation of shielded metal arc welding (SMAW) equipment and mastery in the vertical, 3-F and overhead, 4-F positions leading to NCCER Welding Level I Credentialing and AWS Plate certification.

Recommended Safe Enrollment: 20

Recommended Hours of Instruction: 140 – 160

Prerequisite: NCCER Welding 3 and teacher recommendation

Low Grade: 9th

High Grade: 12th

STI Short Name: Welding 4

STI Long Name: NCCER Welding 4

Credit: 1

Begin Service Year: 2014-2015

Revised: 1/14/2014

Cluster: Architecture & Construction
Pathway: Construction
Program: HVAC

Course Title: NCCER HVAC 1
Course # 432601
This is the first of three required one-credit courses in the HVAC Technologies Pathway. It is designed to complete all core requirements for NCCER Core Credentialing and to provide students with fundamental knowledge and skills emphasizing use of hand tools, power tools, HVAC theory and practice which are utilized in heating, ventilation, and air conditioning industry. This entry-level course is required for NCCER HVAC Level I credentialing.
Recommended Safe Enrollment: 20 - Cohort of Year 1 Students only
Recommended Hours of Instruction: 140 – 160
Prerequisite: Student should have appropriate 4-year plan and Career Interest documentation.
Low Grade: 9th
High Grade: 12th
STI Short Name: NCCER HVAC 1
STI Long Name: NCCER HVAC 1
Credit: 1
Begin Service Year: 2014-2015

Course Title: NCCER HVAC 2
Course # 432602
This is the second of three required one-credit courses in the HVAC Technologies pathway. Topics include: HVAC theory, application, and the study of components and functions of refrigeration systems. Emphasis is placed on fundamental knowledge, guided practice, and NCCER HVAC Level I requirements.
Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: NCCER HVAC 1 and teacher recommendation
Low Grade: 9th
High Grade: 12th
STI Short Name: NCCER HVAC 2
STI Long Name: NCCER HVAC 22
Credit: 1
Begin Service Year: 2014-2015

Course Title: NCCER HVAC 3
Course # 432603
This is the third of 3 required one-credit courses in the HVAC Technologies pathway. It is designed to provide students with theory, practice, and HVAC skills development. Emphasis is placed on application, installation, and operation of HVAC systems leading to NCCER HVAC Level I Credentialing.
Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: NCCER HVAC 2 and teacher recommendation
Low Grade: 9th
High Grade: 12th
STI Short Name: NCCER HVAC 3
STI Long Name: NCCER HVAC 3
Credit: 1
Begin Service Year: 2014-2015

Revised: 1/14/2014

Cluster: Manufacturing
Pathway: Maintenance, Installation & Repair
Program: Industrial Maintenance Mechanical

Course Title: NCCER Industrial Maintenance- Mechanical 1
Course # 542521

This is the first of three required one-credit courses in the Industrial Maintenance Mechanical Technologies Pathway. It is designed to complete all core requirements for NCCER Core Credentialing and to provide students with fundamental knowledge and skills emphasizing use of hand tools, power tools, theory and practice which are utilized in the Industrial Maintenance industry. This entry-level course is required for NCCER Industrial Maintenance Mechanical Level I Credentialing.

Recommended Safe Enrollment: 20 - Cohort of Year 1 Students only
Recommended Hours of Instruction: 140 – 160
Prerequisite: Student should have appropriate 4-year plan and Career Interest documentation.
Low Grade: 9th
High Grade: 12th
STI Short Name: NCCER IM-M 1
STI Long Name: NCCER Industrial Maintenance-Mechanical 1
Credit: 1
Begin Service Year: 2014-2015

Course Title: NCCER Industrial Maintenance Mechanical 2
Course # 542522

This is the second of three required one-credit courses in the Industrial Maintenance Mechanical Technologies Pathway. Topics include: Industrial Maintenance theory, application and the study of components and functions of mechanical systems. Emphasis is placed on fundamental knowledge, guided practice, and NCCER Industrial Maintenance Mechanical Level I requirements.

Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: NCCER Industrial Maintenance- Mechanical 1
Low Grade: 9th
High Grade: 12th
STI Short Name: NCCER IM-M 2
STI Long Name: NCCER Industrial Maintenance Mechanical 2
Credit: 1
Begin Service Year: 2014-2015

Course Title: NCCER Industrial Maintenance Mechanical 3
Course # 542523

This is the third of three required one-credit courses in the Industrial Maintenance Mechanical Technologies Pathway. Topics include: Industrial Maintenance theory, application, and the maintenance of components to safeguard functions of mechanical systems. Emphasis is placed on application, guided practice and NCCER Industrial Maintenance mechanical Level I requirements.

Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: NCCER Industrial Maintenance- Mechanical 2
Low Grade: 9th
High Grade: 12th
STI Short Name: NCCER IM-M 3
STI Long Name: NCCER Industrial Maintenance Mechanical 3
Credit: 1
Begin Service Year: 2014-2015

Revised: 1/14/2014

Cluster: Manufacturing
Pathway: Maintenance, Installation & Repair
Program: Industrial Maintenance E & I

Course Title: NCCER Industrial Maintenance- E&I 1
Course # 542511
This is the first of three required one-credit courses in the Industrial Maintenance Electrical and Instrumentation Technologies Pathway. It is designed to complete all core requirements for NCCER Core Credentialing and to provide students with fundamental knowledge and skills emphasizing use of hand tools, power tools, theory and practice which are utilized in the Industrial Maintenance industry. This entry-level course is required for NCCER Industrial Maintenance E&I Level 1 credentialing.
Recommended Safe Enrollment: 20 - Cohort of Year 1 Students only
Recommended Hours of Instruction: 140 – 160
Prerequisite: Student should have appropriate 4-year plan and Career Interest documentation.
Low Grade: 9th
High Grade: 12th
STI Short Name: NCCER IM-E&I 1
STI Long Name: NCCER Industrial Maintenance- E&I 1
Credit: 1
Begin Service Year: 2014-2015

Course Title: NCCER Industrial Maintenance E&I 2
Course # 542512
This is the second of three required one-credit courses in the Industrial Maintenance E&I Technologies Pathway. Topics include: Industrial Maintenance theory, application, and the study of components and functions of both mechanical and electrical systems. Emphasis is placed on fundamental knowledge, guided practice, and NCCER Industrial Maintenance Mechanical Level I requirements.
Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: NCCER Industrial Maintenance- E&I 1
Low Grade: 9th
High Grade: 12th
STI Short Name: NCCER IM- E&I 2
STI Long Name: NCCER Industrial E&I 2
Credit: 1
Begin Service Year: 2014-2015

Course Title: NCCER Industrial Maintenance E&I 3
Course # 542513
This is the third of 3 required one-credit courses in the Industrial Maintenance E&I Technologies Pathway. Topics include: Industrial Maintenance theory, application, and the use and maintenance of components to safeguard functions of electrical and mechanical industrial systems. Emphasis is placed on application, guided practice and NCCER Industrial Maintenance E&I Level I requirements.
Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: NCCER Industrial Maintenance- E&I 2
Low Grade: 9th
High Grade: 12th
STI Short Name: NCCER IM- E&I 3
STI Long Name: NCCER Industrial Maintenance E&I 3
Credit: 1
Begin Service Year: 2014-2015

Revised: 1/14/2014

Cluster: Manufacturing
Pathway: Production
Program: Manufacturing

Course Title: Manufacturing 1
Course # 540061
This is the first of three required one-credit courses in the Manufacturing Technologies Pathway. It is designed to complete all core requirements for NCCER Core Credentialing and to provide students with fundamental knowledge and skills emphasizing use of safety, tools, theory, and practice for use in the manufacturing industry. Students are introduced to concepts describing manufacturing processes and production. This entry-level course is required for NCCER Core Credentialing and begins to prepare students for MSSC assessments for credentialing.
Recommended Safe Enrollment: 20 - Cohort of Year 1 Students only
Recommended Hours of Instruction: 140 – 160
Prerequisite: Student should have appropriate 4-year plan and Career Interest documentation.
Low Grade: 9th
High Grade: 12th
STI Short Name: Manufacturing 1
STI Long Name: Manufacturing 1
Credit: 1
Begin Service Year: 2014-2015

Course Title: Manufacturing 2
Course # 540062
This is the second of three required one-credit courses in the Manufacturing Technologies Pathway. It is designed to address many core requirements for MSSC credentialing and to provide students with fundamental knowledge and skills emphasizing quality practices and measurement common to the manufacturing industry. Students explore concepts of manufacturing processes and production. This course prepares students for MSSC Technician assessment and credentialing.
Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: Manufacturing 1
Low Grade: 9th
High Grade: 12th
STI Short Name: Manufacturing 2
STI Long Name: Manufacturing 2
Credit: 1
Begin Service Year: 2014-2015

Course Title: Manufacturing 3
Course # 540063
This is the third of three required one-credit courses in the Manufacturing Technologies Pathway. It is designed to address many core requirements for MSSC Credentialing and to provide students with fundamental knowledge and skills emphasizing maintenance awareness and practices common to the manufacturing systems. This course helps prepare students for MSSC Technician assessment and credentialing.
Recommended Safe Enrollment: 20
Recommended Hours of Instruction: 140 – 160
Prerequisite: Manufacturing 2
Low Grade: 9th
High Grade: 12th
STI Short Name: Manufacturing 3
STI Long Name: Manufacturing 3
Credit: 1
Begin Service Year: 2014-2015