An Introduction to WECM

Workforce Education Course Manual
What You Will Find in This Introduction to WECM

This tutorial is designed to answer basic questions about the Workforce Education Course Manual (WECM). Each of its five sections will address aspects of WECM that you will find useful if you are new to postsecondary workforce education.

**Section I: What Is WECM?**
WECM’s purposes, how it aligns with the statewide workforce education plan, and its history.

**Section II: How WECM Is Organized**
The elements of a WECM course, the types of WECM courses, and WECM course categories.

**Section III: The Ongoing WECM Project**
Who’s involved, the WECM Protocol Manual, and the WECM course review workshop.

**Section IV: WECM and GIPWE**
An overview of GIPWE and how WECM and GIPWE work together.

**Section V: Make WECM Work for You**
Learn how to navigate the WECM website.
Duane Hiller of the Texas Higher Education Coordinating Board gives an overview of what you will learn in An Introduction to WECM.

Section menus on the left margin of each section allow you to go back and forth within the section.

Use the arrows at the bottom left and right corners to turn pages of the tutorial.
Section 1: What Is WECM?

The Workforce Education Course Manual (WECM) is the Texas Higher Education Coordinating Board’s web-based inventory of approved workforce education courses available for use by the state’s public community and technical colleges.

WECM was developed over the course of three years, from 1995 to 1998, through a Carl D. Perkins Leadership Grant administered by the Coordinating Board. Over 1,000 CTE faculty members and approximately 370 CTE administrators contributed to WECM’s creation.

Today, WECM is housed and managed by the Texas Higher Education Coordinating Board and overseen by the WECM Advisory Committee. WECM is reviewed and revised for continuous improvement by community and technical college faculty through WECM Comments.

This section explains WECM’s purposes, how it fits into the statewide workforce education plan, and its history.
**WECM has six stated purposes.** WECM’s purposes express its commitment to public community and technical colleges, their students, and their industry partners:

1. Contribute to the quality and consistency of workforce courses from college to college.
2. Provide Texas colleges increased assistance and flexibility in responding to employer needs.
3. Enhance the portability of credits and credentials for students.
4. Provide increased access for students to workforce education degrees and career advancement.
5. Facilitate articulation with other providers of education at both the secondary and post-secondary levels.
6. Incorporate industry-established skill standards into Texas workforce education.
An Introduction to WECM

What Is WECM?

Overview

WECM's Purposes

WECM Course Integration

WECM's History
  • The Problem
  • The Solution
  • Compare the Results!

WECM courses are integrated with public school requirements and with business and industry's needs.

WECM courses coordinate with the Texas Education Agency’s Texas Essential Knowledge and Skills (TEKS) for Career and Technical Education in public high schools.

WECM courses also align with the U.S. Department of Education’s 16 Career Clusters, which were created to support CTE programs in providing industry-validated knowledge and skills necessary for students to be successful in a chosen field of study.

WECM gives business and industry partners confidence that new graduates have the knowledge, skills, and ability to do the job.
WECM provides approximately 3,670 approved CTE courses that are tightly integrated with secondary and industry requirements and aligned with the federal Career Clusters. WECM is also a key component of state-level efforts toward coordinated workforce development.

But it wasn’t always this way.

Problem:
“Workforce education in the community and technical colleges today is a jumble of courses and programs, variously offered for credit or non-credit, and in often disconnected departments or divisions.”

Source: THECB Workforce Education Course Manual Concept Paper — 7/12/95
Proposed Solution:

We propose the development of a Workforce Education Course Manual. The manual would identify career clusters under which discipline-specific consultants would help identify common technical core courses, course descriptions, course competencies, semester credit and contact ranges, and recommended funding codes. The career clusters would also contain continuing education course options.

Source: THECB Workforce Education Course Manual
Concept Paper — 7/12/95

During the 1990’s, Texas began to look at how to position itself for economic prosperity in the 21st century. A series of legislatively mandated task forces and reports all came to the same conclusion: a comprehensive system of workforce education, one that responds to the needs of business and industry and the needs of Texas residents for employment and career preparation would provide the critical link between workforce and economic development.

The Coordinating Board initiated the WECM Project in 1995 with guidance from a statewide advisory committee, secondary-school educators, community and technical college educators, business/industry representatives, and licensing agencies and associations. A fully developed WECM went into effect in 1998.
Compare the Results!

Before WECM

About 48,000 individual courses statewide

Each course required individual approval.

Courses were locally developed, widely varied, and difficult to compare.

What students learned at one college might not be adequate to get them a job or allow them to continue their training in a new location.

Today

About 3,670 courses with flexible credit and contact-hour options

All courses are approved and ready for program development or curriculum revisions.

Courses have been agreed upon by experienced CTE faculty statewide, with allowances for local variation.

Standardized, industry-ready CTE courses and programs

Employability and improved Portability for CTE students!
WECM courses, written by instructional specialists from community and technical colleges, are organized in a logical and useful manner.

The Coordinating Board assigns six-digit Classification of Instructional Programs (CIP) codes and four-letter rubrics to each WECM course for classifying, recording, and reporting purposes.

The six-digit CIP codes represent instructional program codes, titles, and descriptions of academic and occupational programs offered at postsecondary institutions. CIP codes also relate to specific occupations or job titles.

Each four-letter rubric identifies a cluster of skills and knowledge that can be used to determine course equivalency and degree applicability for transfer on a statewide basis.

This section provides an overview of WECM course elements, course types, and course categories.
Every WECM course contains most or all of the **course elements** listed at the right.

- CIP Code
- Course Rubric
- Course Level
- Course Number
- End-of-Course Outcomes
- Course Title
- Course Description
- Suggested Prerequisite
- Contact Hour Range
- Licensing/Certification Agency (if applicable)

*Go to the next page to see how the course elements appear in an actual WECM course entry.*
**This is an actual course listing from WECM.**  *Move your mouse over each element of the course to learn more about it.*

Pediatric Echocardiography Procedures

<table>
<thead>
<tr>
<th>CIP</th>
<th>Rubric</th>
<th>Number</th>
<th>Course Title</th>
<th>Status</th>
<th>Semester Credit Hrs</th>
<th>Min Cont Hrs</th>
<th>Max Cont Hrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>51.0910</td>
<td>DSPE</td>
<td>2353</td>
<td>Pediatric Echocardiography Procedures</td>
<td>Active</td>
<td>3</td>
<td>48</td>
<td>96</td>
</tr>
</tbody>
</table>

**Course Level:** Advanced

**Course Description:** Advanced pediatric echocardiographic procedures including: 12-lead EKG interpretation, transesophageal echocardiography, the use of contrast, intra-operative and interventional techniques. Considerations associated with intensive care of pediatric patient will be addressed and includes intracardiac monitoring lines, and other accessories to the post-operative patient, pharmacological treatments, and other therapies.

**End-of-Course Outcomes:** Describe the procedures and applications of 12-lead EKG interpretation, transesophageal echocardiography, use of contrast, intra-operative and interventional techniques; discuss the echocardiographer’s role in the care of the pediatric intensive care patient; and list and describe treatments for the critical care patient.

**Licensing/Certification Agency:** American Registry for Diagnostic Medical Sonography; Cardiovascular Credentialing International

**CIP Code Description:** 51.0910 (Diagnostic Medical Sonography/Sonographer and Ultrasound Technician)

**Effective Date:** September 1, 2014
Course Title: Appears on the first line of every WECM course entry. Here are a few details you should know about course titles:

- **A WECM course title should be consistent with and reflective of its end-of-course outcomes.**

- **A WECM course title should not contain vendor information unless it is a vendor-specific course.**

- **For semester-credit-hour (SCH) courses, the WECM title that appears in the WECM Course Inventory must appear in college publications and on transcripts.**

- **For continuing-education-unit (CEU) courses, workforce marketing titles may be used. However, all CEU mirror courses must use the title that appears in the WECM Course Inventory.**
**Course Number:** The four-digit number that follows the course rubric. Click on each number in the course below to learn more about course numbers.

**ITMC 2337** Programming a Microsoft SQL Server Database

---

**The 1st digit** (in combination with the third and fourth digits) indicates **Course Level**:
- 1x00 to 1x39—Introductory
- 1x40 to 1x59 and 2x00 to 2x29—Intermediate
- 2x30 to 2x59—Advanced
(The “x” indicates the SCH or CEU value, which must comply with the range allowed by the GIPWE)

**The 2nd digit** defines the SCH/CEU Value:
- A "3" indicates a 3 Semester Credit Hour (SCH) course.
- A "4" indicates a 4 SCH course.
- A "0" indicates a non-credit continuing education course that is offered for Continuing Education Units (CEU).

**The 3rd and 4th digits** together indicate **Course Type**:
- 00-59 Lecture-Lab
- 60-63 Clinical
- 64-69 Practicum
- 70-79 Local Need
- 80-85 Cooperative Education
- 86-89 Internship
- 90-99 Special Topics

The 4th digit is also used to indicate the **Course Sequence**.
(For example: ITMC 2331, ITMC 2332, ITMC 2333, etc.)
Contact Hour Range: Allows time for mastery of end-of-course outcomes and accommodates a variety of instructional strategies. You should know the following information about contact hour ranges:

- A program must keep the contact-hour and SCH ranges for each WECM course it offers within the parameters listed in the WECM Course Inventory.

- Contact hour ranges for WECM courses are determined by instructional specialists during WECM course reviews and provide for a variety of instructional scenarios. You will learn more about WECM course reviews in the next section of this tutorial.

- Guidelines for determining the contact hours and semester credit hours for individual courses appear in the Guidelines for Instructional Programs in Workforce Education (GIPWE). You will learn more about GIPWE later in this tutorial.
**Course Description: An overview of course content or subject matter.** A good course description is informative to students and never confusing.

To see some characteristics of a good course description, [click here.](#)

- Usually between 25-100 words in length
- Communicates course goals and major topics
- Echoes end-of-course outcomes without restating them
- Explains abbreviations before using them: “Board of Nursing Examiners (BNE)”
- Contains no product names (unless the course is vendor-specific)
- Uses appropriate introductory phrases.
  - A continuation of…
  - Exploration of…
  - Examination of…
  - Repair of…
  - Operation of…
  - Discussion of…
  - In-depth coverage of…
  - A study of…
  - Practice of…
  - Fundamentals of…
End-of-Course Outcomes: Minimum outcomes intended for student attainment. End-of-course outcomes are the “heart” of a WECM course. Here are the first things you need to know about end-of-course outcomes:

- **Every WECM course has stated end-of-course outcomes.** They describe the minimum competencies that students should attain when a college teaches the course.

- **End-of-course outcomes define the purpose of a course and distinguish it from other courses.** They focus on student learning, support portability, and communicate the course’s value to employers and other stakeholders.

- **The stated end-of-course outcomes must be taught every time the course is taught.** They may be enhanced at the local level according to employers’ needs and/or industry standards, and local outcomes may be added to the stated ones. However, enhancements or added outcomes should not be so extensive that they result in a substantially different course.
Well written end-of-course outcomes provide **clear, simple statements about observable, measurable competencies** that students will gain from the course.

If you add or adapt competencies for a WECM course, avoid verbs that don’t call for a student to “do” anything: (know… understand…)

Instead, use **present-tense, action verbs** like these:

- Administer…
- Solve…
- Sketch…
- Create…
- Apply…
- Control…
- Execute…
- Devise…
- Perform…
- Locate…
- Assist…
- Change…
- Complete…
- Employ…
- Collate…
- Access…
End-of-course outcomes usually contain an **object of the action:**

- Solve a *quadratic equation*…
- Sketch a *story line*…
- Create a *complex telecommunications network*…

They may contain **conditions:**

- …using [specific equipment, software, etc.]
- …without using a calculator.
- …in under an hour.
- …referring to the appropriate protocol.
- …as part of a team.

They may contain **standards:**

- …at least 90% accuracy.
- …accurate within 3 decimal places.
- …with no more than 2 spelling errors.
- …to the satisfaction of an expert panel.
- …performed in accordance with [manual or text].
Here are several examples of strong end-of-course outcome statements:

- Render architectural building components meeting standards cited in the manual.
- Integrate 3D animation in video productions.
- Apply video streaming technologies for Internet video.
- Perform urinalysis, cytological, and basic microbiological techniques.
- Explore game and simulation platforms and discuss their strengths and limitations.
- Utilize diagnostic equipment to detect circuit problems.
- Demonstrate system and room modeling techniques with industry-standard prediction software.
- Identify the basic principles involved in the application of electromyography.
- Lay out reference points and establish building lines in accordance with plans.
- Divide a major incident into divisions or groups.
The WECM course elements introduced in this section apply to all WECM course types. Every WECM course falls into one of 10 course types:

1. **Standard College-Credit Course**, This is typically a semester-long course. Students earn semester credit hours (SCH) for taking it.

2. & 3. **Vendor-Specific Course** and its close relative, the **Generic Non-Vendor Course**. Vendor-Specific Courses accommodate the instructional requirements of commercial vendors, usually in Information Technology programs, for students seeking certification in specific software, network engineering, etc. Generic Non-Vendor Courses are identical to vendor-specific courses, but without a specific industry standard.

For some Vendor-Specific Courses, parallel courses that are non-vendor specific are also included in the WECM. These are designed for the institution wishing to offer courses with outcomes similar to those in vendor-specific courses when the institution is not vendor-authorized. You will see the following note in WECM for generic non-vendor courses:

“Not a vendor-specific course. A vendor-specific course is available as follows: _____.”
There are courses that accommodate a variety of needs for Continuing Education:

4. **Continuing Education (CE) Short-Hour Course.** Students may earn 7-40 contact hours. CE Short-Hour Courses are usually developed in state Course Review Workshops as the result of a large volume of Special Topics/Local Need courses. You will learn more about course review workshops in the next section of this tutorial.

5. **CE Professional Development Course.** A generic, 7-24 contact-hour course taught for individuals who need to maintain their licensure or certification.

6. **Less than 7-Hour Mandatory Licensure/Credentialing Course.** May be written by instructional specialists during a WECM workshop or initiated by colleges submitting Local Needs courses to the Coordinating Board. In all cases, there must be documentation from the licensing/credentialing agency supporting the need for the course.
Many workforce education programs require an **External Learning Experience:**

7. **External Learning Experience Course.** These include cooperative education, the practicum (or field experience), internships, and clinicals. Guidelines for teaching these courses are given in GIPWE. You will learn more about how GIPWE and WECM interact later in this tutorial.

The **Mirror Course** is a CE course that is identical to the standard SCH course:

8. **Mirror Course.** Many semester credit hour (SCH) courses have non-credit options (“mirror” images) offered for Continuing Education Units (CEU). When a course may be delivered in either a SCH or a CEU format, the course is defined as a Mirror Course and must be offered as published in the WECM. The college may add additional outcomes but must not substantially change the intent of the course. Institutions awarding credit for mirror courses taught in CEU format must meet all SACSCOC requirements, including faculty requirements.
Finally, WECM has two kinds of courses that accommodate the unique local needs of colleges: the **Special Topics Course** and the **Local Need Course**.

9. **Special Topics Course**. WECM is designed to address new and emerging topics in technical disciplines and to assist colleges in responding quickly to immediate training needs of local employers. There is a provision within each CIP code for developing a special topics course if the needed content does not already exist in a current WECM course. Special topics courses are intended to be **temporary**. Colleges must submit a Special Topics Course Form to the Coordinating Board and must indicate the specific content and course outcomes on the form. The form is good for 24 months only. The Coordinating Board shares these forms with the WECM Project for use in WECM Workshops, as special topics courses sometimes become the basis for the creation of new WECM courses. Special topics courses are available only for workforce education programs (not community education) and are identified by a “9” in the third digit of the course number.

10. **Local Need Course**. Content that is not contained in the WECM and that will be offered repeatedly over several years is most appropriate for local-need status. Local need courses may be used to respond to unique local or regional conditions or regulatory changes, to expand an existing discipline to include a new specialty, or to create courses in new disciplines. (New disciplines are those with no course rubrics in the WECM inventory of courses.) Evidence of need for the course must be substantiated by support from business and industry in the local geographical area. A local need course must be submitted to the Coordinating Board and approved at least 30 days prior to instruction to qualify for state funding. Local need courses are identified by a “7” in the third digit of the course number.
All WECM course types may appear any of the four WECM course categories. Categorizing courses is one function of the WECM course review process, as you will learn in the next section.

- **New WECM Course.** New WECM courses are written as the result of a review of special topics/local need courses. In rare instances, a new WECM course may be written because of new and recent licensure or certification in a specific field. A new WECM course may also be written to meet the demand of emerging and high-tech occupations.

- **Revised WECM Course.** A revised WECM course has been modified to enhance course title, level, description, end-of-course outcomes, course reference information, recommended lab, and/or contact hours for increased usability.

- **Archive-Pending Course.** An archive-pending course is one that has been recommended for removal from the active WECM database because it is unused, obsolete, inadequate, or duplicated. Archive-pending courses are moved to an archive database in WECM, but they are available for use and are funded by the state until the indicated archive date. Courses that have been recommended to be archived in one fiscal year are available for funding (in “archive pending” status) until August 31 of the next fiscal year.

- **Archived Course.** A course that has been removed from the active WECM database due to being is unused, obsolete, inadequate, or duplicated and moved to an archive database for future reference. Archived courses are not eligible for state funding.
Section III: The Ongoing WECM Project

The WECM Advisory Committee’s purpose is the ongoing maintenance of WECM.

After a development period of three years, WECM became fully operational in 1998. Since that time, the WECM Project, a Carl. D. Perkins Leadership grant project, ensured that WECM courses stayed current with the needs of business and industry, and that WECM was integrated with statewide curriculum and workforce development initiatives.

In April 2017, the WECM Project was replaced by a Coordinating Board-appointed WECM Advisory Committee, which was charged with providing the Board with advice regarding content, structure, currency, and presentation of the WECM and its courses; recommendations regarding field engagement in processes, maintenance, and use of the WECM; and assistance in reviewing state policies, procedures, and guidelines.

This section will introduce you to the WECM Advisory Committee’s guiding document, the WECM Protocol Manual, and the WECM course review process.
The Texas Higher Education Coordinating Board has overseen and supported the WECM project since the beginning. Working with stakeholders statewide, the Coordinating Board laid the conceptual groundwork for the WECM. The Coordinating Board also:

- **Funded the WECM Project through Carl D. Perkins Leadership funds until August 31, 2017**;
- **Meets regularly with the WECM Advisory Committee and its subcommittees**;
- **Houses the WECM Course Inventory on its website**;
- **Provides Coordinating Board staff to manage the WECM database**;
- **Provides guidance for programmatic uses of WECM through GIPWE (Guidelines for Instructional Programs in Workforce Education); and**
- **Coordinates WECM’s integration with statewide curriculum, Programs of Study, and workforce development initiatives**.
The WECM Advisory Committee oversees the maintenance of WECM and also maintains the WECM Protocol Manual.

In order to serve on the WECM Advisory Committee, an individual should:

- **Hold a directly related administrative position in a Texas community or technical college;**
- **Be recognized for noteworthy accomplishments, leadership, and professional standing in workforce education; and**
- **Possess demonstrated competence in WECM implementation at the institutional level.**

The WECM Advisory Committee meets quarterly to discuss WECM issues such as WECM course review, WECM protocol updates, and current workforce education matters.
An Introduction to WECM

"The intent of this manual is to convey the definitions, concepts, working policies, and procedures that guide WECM maintenance. It reflects the decisions upon which WECM was structured as well as guidelines for maintenance operations."

Source: The WECM Protocol Manual – 2/7/13

The WECM Protocol Manual is a document available on the WECM website that reflects decisions made in the creation of WECM and those made by the Coordinating Board and the WECM Advisory Committee since that time.

The WECM Protocol Manual conveys concepts, definitions, procedures, and policies for WECM maintenance. The manual addresses:

- Course structure and course types;
- Course review workshop models;
- The roles of professionals in WECM maintenance; and
- The composition and operation of the WECM Leadership Committee.

The review, revision, creation, and archiving of WECM courses is done in accordance with the WECM Protocol Manual.
The core activity of the WECM Advisory Committee is the coordination of WECM course review. WECM courses are reviewed under the WECM Advisory Committee’s guidance. Each year, the WECM Advisory Committee sends a request to each college for field comments based on Triggers, including Accreditation or Licensure Changes, Emerging Industries, Changing Technologies, and Skill Standards Updates.

Instructional specialists, led by WECM-trained workforce education administrators, may create, revise, and/or archive courses based on important factors such as technological advances; course utilization; Local Need requests; trends in Special Topics courses; and the requirements of licensing, certifying, and accrediting bodies.

Experienced faculty and other content experts from around the state contribute to every change in the WECM database.
Faculty who participate in WECM course reviews must be nominated by their colleges. Faculty who are chosen to participate meet the following qualifications:

“I understand that the individual I am nominating to the WECM course review (if accepted) will be representing all of the Texas community and technical colleges as an instructional specialist in his/her area of expertise, and that decisions made during the review are to be in support of programs across the state.”

Source: Faculty Nomination Form

Selection of faculty members is based on three criteria:

- Proportional representation from small, medium, and large colleges;
- Equal representation of geographic regions; and
- Gender and ethnicity balance, whenever possible.

- Community or technical college instructor who is considered to be an expert in the specific courses under review and who has recently taught the courses;
- Nominated by a college administrator and selected by the WECM Advisory Committee;
- A team player; and
- Willing to represent the state in their particular area of expertise.
WECM Course Review Workshops may be called at any time. Prior to the workshops, the WECM Advisory Committee determines which courses should be reviewed, based on triggers listed in the WECM Protocol Manual. Triggers include:

- Programs of Study Workshop recommendations;
- Emerging and/or changing technologies;
- Business/industry standards;
- State and national credentialing requirements; and
- Identified needs as indicated by statewide curriculum projects.

Each spring, the Texas Administrators of Continuing Education (TACE) WECM Committee members conduct a review of continuing education special topics/local need courses submitted to the Coordinating Board during the previous year. Review is based on appropriateness of the course for WECM and compliance with the WECM Protocol Manual. The TACE WECM Committee makes written recommendations to the WECM Advisory Committee for new WECM courses, based on trends identified during their course review.

At each Course Review Workshop, instructional specialists determine if courses need to be updated or archived, or new courses written, to address the needs of business and industry. Decisions made by these faculty members are generally final and cannot be changed by WECM Advisory Committee or the Coordinating Board.
Section IV: WECM and GIPWE

Guidelines for Instructional Programs in Workforce Education, or GIPWE, is the Coordinating Board’s official policy manual for the effective design, development, operation, and evaluation of workforce education programs in the state of Texas. It provides comprehensive guidance to colleges and faculty member, including:

- General institutional and personnel requirements for workforce education programs;
- Required program elements for all varieties of workforce education, from apprenticeships to applied associate degrees;
- In-depth discussion of WECM and how to use it for program development and revision;
- The approval process for new workforce education programs; and
- Requirements for program revision.

GIPWE also provides a glossary of terms for new workforce education faculty.

“All career technical/workforce continuing education courses shall meet the guidelines outlined in the Guidelines for Instructional Programs in Workforce Education as approved by the Board and the Workforce Education Course Manual.”

Source: Coordinating Board Rule 9.114
Section V: Make WECM Work for You

This Introduction to WECM has given you the basics about the Coordinating Board’s database of approved workforce education courses available for use by the state’s public community and technical colleges. You have learned:

- WECM’s purpose and history;
- How WECM integrates with workforce-development initiatives and priorities;
- The types of courses in WECM and the common elements of WECM courses;
- The categories WECM courses fall into, based on the WECM maintenance process;
- How the field-driven, statewide WECM Project has kept WECM current since 1998; and
- How WECM and GIPWE work hand-in-hand for workforce education programs across the state.

This is information that every workforce education faculty member and professional should know.

So, what comes next?

The final section of An Introduction to WECM will give you a rundown on how to navigate the WECM website and what you will find there.

Now you can make WECM work for you!