## Skilled Trades

## Construction Technology I (CTCON1)
**Certificate**

**Program Effective Term:**     **Fall 2025**

**High Demand Occupation   High Wage Occupation**

This program prepares students for entry-level jobs in a broad range of careers in the construction industry, where they need an understanding of building systems, the safe use of tools and equipment, materials, and the vocabulary of the field.

| Major/Area Requirements | | (17 credits) |
|---|---|---|
| CON 104 | Construction Framing I | 3 |
| CON 105 | Construction Framing II | 3 |
| CON 108 | Introduction to Construction Technology | 2 |
| CON 204 | Construction Finishes - Interior | 3 |
| CON 205 | Construction Finishes - Exterior | 3 |
| CON 255 | Construction Concrete and Masonry | 3 |

**Minimum Credits Required for the Program:**                                    **17**

**PROGRAM CHANGE FORM**

| Program Code: CTCON1 | Current Program Name: Construction Technology I | Effective Term: Fall 2025 |
|---|---|---|
| Division Code: ATP | Department: HVAD | |

**Directions:**

1. Attach the current program listing from the WCC catalog or website and indicate any changes to be made.

2. Draw lines through any text that should be deleted and write in additions. Extensive narrative changes can be included on a separate sheet.

3. Check the boxes below for each type of change being proposed. Changes to courses, discontinuing a course, or adding new courses as part of the proposed program change, must be approved separately using CurricUNET, but should be submitted at the same time as the program change form.

4. If changes affect the program assessment plan or if program outcomes are updated, please submit a Program Assessment Plan Change form. These changes must be approved separately from the program change form and should be submitted at the same time. Current program assessment plans can be found on the Curriculum and Assessment Program Information page.

**Requested Changes:**

☐ Remove course(s): _____
☐ Add course(s): _____
☐ Program title (new title is _____ )
☐ Description
☐ Advisors
☐ Program admission requirements
☐ Continuing eligibility requirements

**Show all changes on the catalog page you attach.**

 * Please submit a Program Assessment Plan Change form.

☐ Program outcomes (may also result from removing or adding a course)*
☒ Program assessment plan
☐ Accreditation information
☒ Other Rescind phase out and return program to active status.

Note: A change to the Award Type requires the submission of a new program proposal form and a separate program inactivation form. Contact the Director of Curriculum & Assessment for more information.

**Rationale for proposed changes:**

When the decision was made to deactivate these programs, construction projects were dwindling and there wasn't a high demand for skilled construction laborers. Today's reality is very different and there will be individuals going into the industry looking for ways to stand out among their peers. For this reason, we are creating the new Construction Technology AAS degree, and as part of this effort, bringing back CTCON1 and CVCON2 to be embedded into this new degree, providing students with the opportunity to earn stackable credentials as they work through the program. Both of these certificates had started the phase out process, but we now find renewed justification in the newly revived construction industry. The four courses that were inactivated, but part of CVCON2, are being reactivated as well. We're confident that these were simply ahead of their time, and that this new landscape means the program can have a strong and lasting positive impact for our students.

**Financial/staffing/equipment/space implications:**
A new faculty member, Matt Hagood, has been hired and is spearheading these changes.

**List departments that have been consulted regarding their use of this program.**

**Signatures:**

| Reviewer | Print Name | Signature | Date |
|---|---|---|---|
| Initiator | Matthew A. Hagood | Matthew A. Hagood /s/ | 02/10/2025 |

**PROGRAM CHANGE FORM**

| | | | |
|---|---|---|---|
| Department Chair | Brian Martindale | Brian Martindale /s/ | 02/10/2025 |
| Division Dean/Administrator | Eva Samulski | Eva Samulski /s/ | 02/10/2025 |
| Please return completed form to the Office of Curriculum & Assessment, SC 257 or by e-mail to curriculum.assessment@wccnet.edu Once reviewed by the appropriate faculty committees we will secure the signature of the VPI. | | | |
| **Reviewer** | **Print Name** | **Signature** | **Date** |
| Curriculum Committee Chair | Randy Van Wagnen | R VanWagnen | 3/08/25 |
| Assessment Committee Chair | Jessica Hale | Hale | 3/12/25 |
| Executive Vice President for Instruction | Dr. Brandon Tucker | | 3/13/25 |

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Reviewed by C&A Committee 2/13/25

# Construction Technology I (CTCON1)

**Description** (unchanged from previous version):
This program prepares students for entry-level jobs in a broad range of careers in the construction industry, where they need an understanding of building systems, the safe use of tools and equipment, materials, and the vocabulary of the field.

**Major/Area Requirements** (unchanged from previous version)

| | | |
|---|---|---|
| CON 104 | Construction Framing I | 3 |
| CON 105 | Construction Framing II | 3 |
| CON 108 | Introduction to Construction Technology | 2 |
| CON 204 | Construction Finishes – Interior | 3 |
| CON 205 | Construction Finishes – Exterior | 3 |
| CON 255 | Construction Concrete and Masonry | 3 |

**Minimum Credits Required for the Program:**  **17**

**Washtenaw Community College**

## Program Discontinuation Form

| Program Code: CTCON1 | Program Name: Construction Technology I | Effective Term: Fall 2023 |
|---|---|---|
| Division Code: ATP | Department: HVAC | |

**Directions:** Complete all information below.

**Rationale for discontinuation:**

The program enrollment has dropped from 28 students in 2019-2022 to two (2) students enrolled in Winter 2022. On average 1.5 students graduated from the program over the period of 2016-2017 to 2019-2020. In 2020-2021 four (4) students graduated from the program. Enrollment numbers:

| 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|
| 27 | 28 | 17 | 20 | 9 | 5 | 2 |

**Describe the discontinuation, transition and course phase-out plan. Please include the number of currently enrolled students.**

Of the two (2) students who are currently enrolled in the program, one will complete the program requirements at the end of winter semester. The other student has audited two of the required courses and, therefore, is not seeking a degree.

**List departments using this program and the date they were notified of the planned discontinuation.**

N/A

**Signatures:**

| Reviewer | Print Name | Signature | Date |
|---|---|---|---|
| Initiator | Cristy Lindemann | *[signature]* | 4.16.22 |
| Department Chair | Brian Martindale | *[signature]* | 4/19/22 |
| Division Dean/Administrator | Jimmie Baber | *Jimmie Baber* | 4/19/2022 |

| Reviewer | Print Name | Signature | Date |
|---|---|---|---|
| Curriculum Committee Chair | Randy Van Wagnen | *[signature]* | 5-31-22 |
| Vice President for Instruction | Victor Vega | *[signature]* | 9/7/2023 |
| President | Rose B. Bellanca | *[signature]* | 9/7/23 |

Do not write in shaded area. Entered in: Banner ___ C&A Database 9/11/23 Log File 9/11/23 Board Approval ___

Reviewed by C&A Committees 5/19/22

# PROGRAM CHANGE OR DISCONTINUATION FORM

_Technology I_

**Program Code** ~~CTRC1~~ **Program Name:** ~~Residential~~ Construction I
*CTCON1*

**Effective Term: Fall, 2012**

**Division Code:** VCT    **Department:** Construction Institute

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**Directions:**

1. Attach the current program listing from the WCC catalog or Web site and indicate any changes to be made.

2. Draw lines through any text that should be deleted and write in additions. Extensive narrative changes can be included on a separate sheet.

3. Check the boxes below for each type of change being proposed. Changes to courses, discontinuing a course, or adding new courses as part of the proposed program change, must be approved separately using a Master Syllabus form, but should be submitted at the same time as the program change form.

---

**Requested Changes:**

☐ Review
☒ Remove course(s): _CON106_____
☒ Add course(s): CON 10**2**, CON 255_____
☒ Program title (title was RES CON I)New title - Construction
☒ Description                               Technology I
☐ Type of award
☐ Advisors
☐ Articulation information

☒ Program admission requirements
☒ Continuing eligibility requirements
☒ Program outcomes
☐ Accreditation information
☐ Discontinuation (attach program discontinuation plan that includes transition of students and timetable for phasing out courses)
☐ Other_____

Show all changes on the <u>attached page from the catalog</u>.

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**Rationale for proposed changes or discontinuation:**

Assessment and advisory board recommendations.

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**Financial/staffing/equipment/space implications:**

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**List departments that have been consulted regarding their use of this program.**

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**Signatures:**

| Reviewer | Print Name | Signature | Date |
|---|---|---|---|
| Initiator | Cristy Lindemann | | 2/14/2012 |
| Department Chair | Cristy Lindemann | | 2/14/2012 |
| Division Dean/Administrator | Ross Gordon | | 2/15/2012 |
| Vice President for Instruction | Stuart Blacklaw | | 4-5-12 |
| President | Dr. Rose Bellanca | | |

Please submit completed form to the Office of Curriculum and Assessment and email an electronic copy to <u>sjohn@wccnet.edu</u> for posting on the website.

*logged 2/15/12 sjv*
**Office of Curriculum & Assessment**

Residential Construction I

Program Outcomes

1. Use tools and equipment safely.

2. Construct various projects per construction industry standards.

3. Diagnose problems that may arise when light frame construction systems are installed or constructed incorrectly.

**Program Information Report**

## School of Construction Technology

Become part of the growing global community of skilled trades' professionals or skilled trades' managers. Design, plan, construct and complete structures for your home or for your career. You can earn a certificate or degree in Residential Construction, Construction Management or Heating, Ventilation and Air Conditioning. These programs offer the perfect blend of classroom education and hands-on training. At the Henry S. Landau Design and Construction Training Center, you will be taught construction skills from the ground up. You can learn classic skills such as woodworking or modern techniques needed to maintain or improve your own structure. On the main campus, the HVAC program offers a wide range of training to equip high-end technicians with the knowledge and skills needed for successful entry into the field.

Washtenaw Community College offers programs at several levels for students who want to begin new careers, or advance in their existing careers. The first level is the certificate, which can vary from nine to thirty-six credits, depending on the field. Certificates generally prepare students for entry-level jobs.

After completing a certificate, students can progress to the next level, the advanced certificate. The credit hours required for these programs also vary. This type of certificate provides a more specialized level of skill development, and often allows students to upgrade their positions at their places of employment.

The next level, an Associate in Applied Science, is available for some programs. For some career fields, it is possible to earn a certificate, advanced certificate, and an Associate in Applied Science degree in the same field. In these cases, the credit hours from the certificate and advanced certificate can be applied to the credit hours needed for the Associate in Applied Science degree.

Alternatively, students can earn an AAS in Occupational Studies by completing a certificate, advanced certificate and General Education requirements.

## Construction

If you want to learn basic construction, prepare to take the Michigan Builder's License exam or are considering starting a construction business, this is the place to start.

## Construction Technology I (CTCON1)
### Certificate
**Program Effective Term:     Fall 2012**

This program prepares students for entry-level jobs in a broad range of careers in the construction industry, where they need an understanding of building systems, the safe use of tools and equipment, materials, and the vocabulary of the field.

**Articulation:**
Eastern Michigan University, several BS degrees.

Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges

| Major/Area Requirements | | Credits |
|---|---|---|
| CON 104 | Construction Framing I | 3 |
| CON 105 | Construction Framing II | 3 |
| CON 108 | Introduction to Construction Technology | 2 |
| CON 204 | Construction Finishes - Interior | 3 |
| CON 205 | Construction Finishes - Exterior | 3 |
| CON 255 | Construction Concrete and Masonry | 3 |

**Minimum Credits Required for the Program:**                           **17**

Washtenaw Community College.
**Certificates and Degrees.**
http://www4.wccnet.edu/academicinfo/creditofferings/programs/degree.php?code=CTRC1

## ~~Residential Construction I~~ (CTRC1) *Construction Technology I*
Certificate

Program requirements shown below are for catalog year: 2011 - 2012 ▼ Change Year

**Description:**
This program prepares students for entry-level jobs in a broad range of careers in the construction industry, where they need an understanding of building systems, the safe use of tools and equipment, materials, and the vocabulary of the field. ~~This program also gives students the potential for being selected for one of the many apprentice classifications associated with the construction field.~~

**Contact Information:**
Division: Vocational Technologies
School: School of Construction Technology
Department: Construction Institute Dept
Advisors: Brad Hoth, Cristy Lindemann

**Articulation:**
Eastern Michigan University, several BS degrees.

Copies can be obtained from the Counseling Office, a program advisor, or from the Curriculum and Assessment Office Web site: http://www.wccnet.edu/departments/curriculum/articulation.php?levelone=colleges

| Major/Area Requirements | | (15 Credits) |
|---|---|---|
| CON 104 | ~~Residential Construction I~~ *Construction Framing I* | 3 |
| CON 105 | ~~Residential Construction II~~ *Construction Framing II* | 3 |
| ~~CON 106~~ | ~~Math, Measurement, and Graphics~~ | ~~3~~ |
| CON 204 | ~~Residential Construction III~~ *Construction Finishes - Interior* | 3 |
| CON 205 | ~~Residential Construction IV~~ *Construction Finishes - Exterior* | 3 |
| CON 108 | *Introduction to Construction Technology* | 2 |
| CON 255 | *Construction Concrete & Masonry* | 3 |
| **Minimum Credits Required for the Program:** | | ~~15~~ Credits **17** |

---

**Estimated Cost**

| | |
|---|---|
| Tuition & Fees | $2,580.00 |
| Books & Supplies | $425.00 |
| **Total Cost** | **$3,005.00** |

**Length of Program**

| | |
|---|---|
| Intended time to complete | 2 semesters |

**Careers Related to this Program**

First-Line Supervisors/Managers of Construction Trades and Extraction Workers
Solar Energy Installation Managers

# PROGRAM CHANGE OR DISCONTINUATION FORM

Program Code: CTROON    Program Name: Residential Cnst. Tech   Effective Term: F06

Division Code: HAT    Department: Construction

## Directions:

1. Attach the current program listing from the WCC catalog or Web site and indicate any changes to be made.
2. Draw lines through any text that should be deleted and write in additions. Extensive narrative changes can be included on a separate sheet.
3. Check the boxes below for each type of change being proposed. Changes to courses, discontinuing a course, or adding new courses as part of the proposed program change, must be approved separately using a Master Syllabus form, but should be submitted at the same time as the program change form.

## Requested Changes:

- [ ] Review
- [x] Remove course(s): ARC 101
- [x] Add course(s): CON 2-106 Construction I
- [ ] Program title (title was _____)
- [ ] Description
- [ ] Type of award
- [ ] Advisors
- [ ] Articulation information

- [ ] Program admission requirements
- [ ] Continuing eligibility requirements
- [ ] Program outcomes
- [ ] Accreditation information
- [ ] Discontinuation (attach program discontinuation plan that includes transition of students and timetable for phasing out courses)
- [ ] Other _____

Show all changes on the attached page from the catalog.

## Rationale for proposed changes or discontinuation:

Arc class is duplication of what we cover in con 1-4

## Financial/staffing/equipment/space implications:

Ø

## List departments that have been consulted regarding their use of this program.

ARC / DEAN WILSON

## Signatures:

| Reviewer | Print Name | Signature | Date |
|---|---|---|---|
| Initiator | Cnsty Lindemann | | 03.07.06 |
| Department Chair | Cnsty Lindemann | | 03.07.06 |
| Division Dean/Administrator | Granville | | 3/7/06 |
| Vice President for Instruction | VB | Mary c r  a l as | M. Palas | 3/30/06 |

Do not write in shaded area.   Entered in: Banner_____   C&A Database_____   Log File 3/16/06

Please submit completed form to the Office of Curriculum and Assessment and email an electronic copy to sjohn@wccnet.edu for posting on the website.

# Residential Construction Technology (CTRCON)

Certificate

## Major/Area Requirements (15 Credits)

| | | |
|---|---|---|
| CON 104 | Construction I | 3 |
| CON 105 | Construction II | 3 |
| CON 106 | Construction Math, Measurement and Graphics | 3 |
| CON 204 | Construction III | 3 |
| CON 205 | Construction IV | 3 |

**Minimum Credits Required for the Program:** 15 Credits

*Notes: Students can earn an associate degree in Residential Construction Technology by following the Occupational Studies Program.*

**Residential Construction Technology (CTRCON)**

This program prepares you for entry-level jobs in a broad range of careers in the construction industry, where you'll need an understanding of building systems, the safe use of tools and equipment, materials, and the vocabulary of the field. This program also gives you the potential for being selected for one of the many apprentice classifications associated with the construction field.

# Advanced Residential Construction (CVRCN)

Advanced Certificate

## Major/Area Requirements (15 Credits)

| | | |
|---|---|---|
| CON 220 | Residential Construction Licensing, Contracts, and Start Up | 3 |
| CON 230 | Residential Construction Production | 3 |
| CON 240 | Advance Trim and Interior Finish Techniques | 3 |
| CON 255 | Residential Construction Concrete and Exterior Finishes | 3 |
| CON 260 | Residential Construction Remodeling | 3 |

**Minimum Credits Required for the Program:** 15 Credits

**Advanced Residential Construction Technology (CVRCN)**

This advanced certificate prepares students for specific careers in residential construction. The program will prepare students to take the State of Michigan Builder's License exam, create contracts for residential construction projects, and gain necessary techniques for specific residential contractors.

**Program Admission Requirements:** Completion of the Residential Construction Technology Certificate or two years experience in the construction industry is required for entry into this program.

CONSTRUCTION TECHNOLOGY

# PROGRAM CHANGE OR DISCONTINUATION FORM

**Program Code:** ~~CTRON~~

**Program Name: Residential Construction I**

**Effective Term: W07**

**Division Code:** HAT  **Department:** Construction

*new code CTRC1*

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## Directions:

1. Attach the current program listing from the WCC catalog or Web site and indicate any changes to be made.

2. Draw lines through any text that should be deleted and write in additions. Extensive narrative changes can be included on a separate sheet.

3. Check the boxes below for each type of change being proposed. Changes to courses, discontinuing a course, or adding new courses as part of the proposed program change, must be approved separately using a Master Syllabus form, but should be submitted at the same time as the program change form.

---

## Requested Changes:

☐ Review
☐ Remove course(s): _____
☐ Add course(s): _____
☒ Program title (title was Residential Construction Technology)
)
☐ Description
☐ Type of award
☐ Advisors
☐ Articulation information

☐ Program admission requirements
☐ Continuing eligibility requirements
☐ Program outcomes
☐ Accreditation information
☐ Discontinuation (attach program discontinuation plan that includes transition of students and timetable for phasing out courses)
☐ Other _____

Show all changes on the <u>attached page from the catalog</u>.

---

## Rationale for proposed changes or discontinuation:

For a student locating on line and in course information to line up with new advanced program.

---

## List departments that have been consulted regarding their use of this program.

Curriculum and assessment and Dean of Admissions

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## Signatures:

| Reviewer | Print Name | Signature | Date |
|---|---|---|---|
| Initiator | | | |
| Department Chair | Cristy Lindemann | | 7.24.06 |
| Division Dean/Administrator | Granville Lee | | 7/24/06 |
| Vice President for Instruction | | | 7/26/06 |
| President | | | |

**Do not write in shaded area.** Entered in: Banner_8/1/_ C&A Database_10/13/06 Log File 7/24/06 Board Approval_____

Please submit completed form to the Office of Curriculum and Assessment and email an electronic copy to <u>sjohn@wccnet.edu</u> for posting on the website.

Washtenaw Community College.
**Certificates and Degrees A to Z.**
http://www.wccnet.edu/academicinfo/creditofferings/programs/atoz/atoz2.php?code=CTRCON

Return to web format »

## Programs: Residential Construction Technology (CTRCON)
Certificate

Program requirements shown below are for catalog year: | 2005 - 2006 ▾ | Change Year |

**Description:** This program prepares students for entry-level jobs in a broad range of careers in the construction industry, where they need an understanding of building systems, the safe use of tools and equipment, materials, and the vocabulary of the field. This program also gives students the potential for being selected for one of the many apprentice classifications associated with the construction field.

**Division:** Health and Applied Technologies

**Department:** Construction Institute

**Advisors:** Cristy Lindemann

| **Major/Area Requirements** | | **(15 Credits)** |
|---|---|---|
| ~~ARC 101~~ | ~~Graphic Communication for the Construction Industry~~ | ~~3~~ |
| CON 104 | Construction I | 3 |
| CON 105 | Construction II | 3 |
| CON 204 | Construction III | 3 |
| CON 205 | Construction IV | 3 |
| CON 106 | Residential Construction Basics | 3 |

**Total Credits Required for the Program:**                      **15 Credits**

*Footnotes:*

*\*Students can earn an associate degree in Residential Construction Technology by following the Occupational Studies Program.*

**Additional Information:**

**Related Web Sites:**

This website is for informational purposes only and is not to be construed as a binding offer or contract between WCC and the student. The information presented here is believed accurate, but is NOT guaranteed and is subject to change without notice.

For official information, see an Advisor.

Back to the A to Z List of Programs
View Programs in Career Areas/Paths

# Construction and Related Trades

## Residential Construction Technology (CTRCON)
## Certificate

**Program Effective Term: Fall 2006**

This program prepares students for entry-level jobs in a broad range of careers in the construction industry, where they need an understanding of building systems, the safe use of tools and equipment, materials, and the vocabulary of the field. This program also gives students the potential for being selected for one of the many apprentice classifications associated with the construction field.

## Major/Area Requirements            (15 credits)

| | | |
|---|---|---|
| CON 104 | Construction I | 3 |
| CON 105 | Construction II | 3 |
| CON 106 | Residential Construction Math, Measurement, and Graphics | 3 |
| CON 204 | Construction III | 3 |
| CON 205 | Construction IV | 3 |
| | **Total Credit Hours** | **15** |

**Minimum Credits Required for the Program**          **15**

Notes:
*Students can earn an associate degree in Residential Construction Technology by following the Occupational Studies Program.*

## Program Approval Document

## Achievement Certificate
## In

## CONSTRUCTION TECHNOLOGY

*Prepared by*
Les Pierce
Washtenaw Community College

April 8, 1999

# WASHTENAW COMMUNITY COLLEGE
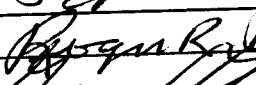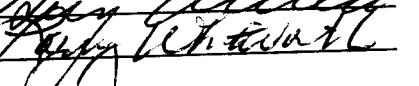## PROGRAM AUTHORIZATION FORM

Program Code: RCT

CIP Code:

**1. Program Title:** Construction Technology

**2. Division:** TEC     **3. Department:** TEC

**4. Type of Program:**  ☐ A.A.  ☐ A.S.  ☐ A.A.S.  ☐ A.T.S.

☐ Advanced Certificate  ☐ Mastery Certificate  ☒ Achievement Certificate  ☐ Certificate of Completion

**5. Will this program be Perkins funded?**  ☒ yes  ☐ no     **6. Effective Year:** Fall 1999

**7. Program Description (for Catalog, brochures, etc.:**
This certificate program will prepare individuals to perform successfully in entry-level jobs in the broad range of careers in the construction industries. Students who successfully complete the program will have a basic understanding of building systems, the safe and effective use of construction tools and equipment, a broad-based understanding of building systems, materials and installation processes and an effective technical vocabulary that will enable them to compete effectively on the job in homebuilding, remodeling, maintenance, supplier/vendor/sales positions and field office support as well as improve chances of selection for many of the apprenticeable classifications associated with the broad field of construction.

**8. Advisors:** Les Pierce

| 9. Admissions Criteria: | 10. Criteria for Continuing Program Eligibility: |
|---|---|
| None | |

**11. Attach a Program Approval Document [PAD], which includes the following:**

A. Program Description
B. Program Goals
C. Needs Assessment
D. Enrollment Projections
E. Program Cost Analysis
F. Course Descriptions
G. Analysis of Affected Instructional Units
H. Articulations
I. Licensure/Accreditation

| Approval Recommended: | Print Name | Signature | Date |
|---|---|---|---|
| Program Initiator: | Les Pierce | | |
| Department Chair/Director: | Les Pierce | | |
| Dean: | Roger Bertoia | | |
| VP, Instruction/Student Services: | Guy Altieri | | |
| President: | Larry Whitworth | | 6/3/99 |

Date of Board Approval: May 25, 1999

Available on disk

# COURSE REQUIREMENTS FOR PROGRAM

| Course | Title | Credit | Pre-requisites/Co-requisites |
|---|---|---|---|
| CON 101 104 | Construction I | 5 | None |
| CON 102 105 | Construction II | 5 | CON 101 or consent |
| CON 203 4 | Construction III | 4 | CON 101 and 102 or consent |
| CON 204 5 | Construction IV | 4 | CON 101, 102, and 203 or consent |
| CON 174 or CON 199 | Construction Co-Op I or On the Job Training | 2 | Consent |
| Minimum Credits Required: | | 20 | |

## A. PROGRAM DESCRIPTION

This certificate program will prepare individuals to compete effectively for entry level jobs in the broad range of careers in the construction industry. With a basic understanding of building systems, tool and equipment use, materials and processes, graduates will obtain employment in the homebuilding and remodelling industries that are currently experiencing a profound shortage of qualified employees. In addition, the transferable skills acquired in this program will prepare individuals to enter employment in a wide range jobs requiring knowledge of building systems. These include material suppliers, regional product representatives and the inspection industries. Acquiring these skills will improve applicant chances of selection for apprenticeships available in the building industries and building trades.

## B. PROGRAM GOALS

The certificate in construction technology is designed to provide students with income-producing skills that will help them obtain and keep jobs in the broad field of building construction. Graduates will acquire basic skills in foundations, frame construction, roofing and exterior coverings, door and window installation, drywall installation, flooring and trimwork and a perspective on the interactions among all facets of building systems.

## C. NEEDS ASSESSMENT

- Information about employment trends from the Michigan Occupational Information System (MOIS) suggests that employment opportunities for construction laborers in Michigan will grow about as fast as average for all occupations through the year 2005, with a projected 270 openings expected annually (80 due to growth and 190 due to replacement). Employment for construction inspectors nationwide is expected to increase about as fast as the average through 2006. In Michigan, employment should grow faster than average through 2005, with a projected 100 openings expected annually (50 due to growth, and 50 due to replacement). Better than average growth is predicted for the short term due to recent increases in new residential and non-residential construction.
- Information from MOIS suggests that graduates of this program who work as unionized construction laborers can expect to earn between $24.39 and $25.87 an hour in the Detroit area. Those who become construction inspectors can expect to earn between $23,400 and $60,500 in Michigan, depending on experience and level of responsibility. Advanced training and experience can lead to a higher paying supervisory position.

## D. ENROLLMENT PROJECTIONS

Class capacity of 15 students for Contruction I is expected for Fall 1999. Retention for successive terms is expected to remain near capacity. Adroit scheduling of the Construction Laboratory and the addition of a lab instructor in the ensuing terms will enable the department to serve all levels of competence simultaneously. It is projected that 30 graduates will complete the program by the fifth semester of operation.

The activity level in the building industry is expected to rise only slightly seasonally and stabilize at the present level over the next three to five years. If interest rates remain at the current levels, new housing starts will be sustained. Currently and for the next three years the level of activity is expected to remain unusually high in all aspects of the building industry.

## E. PROGRAM COST ANALYSIS

$65,000.00 in start up costs will be required to bring the Construction Laboratory into compliance with the National Electrical Code, relocate the existing dust control system and purchase class-size quantities of construction equipment, i.e.: portable power saws, drills, handtools, etc. It should be noted that this instructional space will continue to be utilized for existing cabinetmaking coursework and an array of new non-credit programs in currently in development.

$2000.00 per semester will be required for consumable supplies and materials.

$25,000,00 per year will be required for a half-time Lab Instructor, totalling an estimated first year start up cost of $92,000.00. Equipment replacement cost is anticipated at $750.00 per semester after the first year of operation. It is expected that Part-time Faculty will staff this program.

## F. COURSE DESCRIPTIONS

*CON 104* **CON I Construction I**
This course includes an introduction to construction site safety covering portable equipment, scaffolding, personal safety and material handling. Students will be introduced to the basics of residential blueprints, sketching and shop drawings using a systems approach that includes foundations, framing, interior and exterior systems and roof systems. Students begin to develop a professional vocabulary using appropriate technical terminology in order to communicate effectively with jobsite and construction office personnel. After demonstrating competencies in measurement and layout plus the safe use of portable equipment, students will develop basic construction skills constructing team projects involving foundation systems, floor, wall, and roof framing.

*CON 105* **CON II Construction II**
This is a continuation of Construction I. After demonstrating sufficient skills and understanding of safe tools and equipment use, the students will team up to develop skills that include installation of floor covering systems, door and window installation, drywall installation, exterior wall covering systems, and roofing systems application. Tear down and demolition processes are important elements of this course.

*CON 204* **CON III Construction III**
This course covers the broad range of common construction materials, including recent technological developments in structural support, sound control, insulation and exterior coverings. Students will be introduced to basic concepts of estimating and a further study of residential and light commercial printreading. Further development of technical vocabulary skills are included.

*CON 205* **CON IV Construction IV**
This course introduces the student to basic concepts of project management, including a further study of estimating and bid preparation, scheduling basics, jobsite management concepts, and an introduction to building codes.

**CON 174 Co-op Education I**
In this course the student gains skills from a new experience in an approved, compensated position related to the chosen field of study. Together with the instructor and employer, the student sets up work assignments and learning objectives to connect classroom learning with career-related work experience. This is the first of two possible Co-op experiences.

**CON 199 On the Job Training**
On the job training provides actively employed students in building construction an opportunity to earn credit for experiences that may not be available through the College's regular programming.

## G. ANALYSIS OF AFFECTED INSTRUCTIONAL UNITS

This certificate program is designed to provide entry-level job skills in building construction. It is expected that as the graduates acquire more time on the job, they will determine that both career and pay advancement will require additional specialized skill development. Graduates may decide to continue their education in pursuit of an Associates Degree in Construction Management. The College also has a complimentary array of advanced programming in Architecture and Business Administration that will be of interest to the graduate of the Construction Technology Certificate Program.

## H. ARTICULATIONS

Current articulation agreements with the Public School System will continue in place. Those students who successfully complete two semesters of coursework in the Homebuilding Industries Programs in area High Schools and are recommended by their instructors will receive articulated credit for CON I – Construction I and CON II – Construction II.

## I. LICENSURE/ACCREDITATION (IF APPLICABLE)

The College provides opportunities for individuals to prepare for the Builder's Licensing Examination four times each calendar year. Accreditation of Construction Programming is limited to Associate and Baccalaureate level programming.

# CONSTRUCTION TECHNOLOGY
## CERTIFICATE
## 20 CREDITS

## CONSTRUCTION I  PREREQUISITES: NONE
### 5 CREDITS- 8 CONTACT HOURS

THIS COURSE INCLUDES AN INTRODUCTION TO CONSTRUCTION SITE SAFETY COVERING PORTABLE EQUIPMENT, SCAFFOLDING, PERSONAL SAFETY AND MATERIAL HANDLING. STUDENTS WILL BE INTRODUCED TO THE BASICS OF RESIDENTIAL BLUEPRINTS, SKETCHING AND SHOP DRAWINGS USING A SYSTEMS APPROACH THAT INCLUDES FOUNDATIONS, FRAMING, INTERIOR AND EXTERIOR SYSTEMS AND ROOF SYSTEMS. STUDENTS BEGIN TO DEVELOP A PROFESSIONAL VOCABULARY USING APPROPRIATE TECHNICAL TERMINOLOGY IN ORDER TO COMMUNICATE EFFECTIVELY WITH JOBSITE AND CONSTRUCTION OFFICE PERSONNEL.  AFTER DEMONSTRATING COMPETENCIES IN MEASUREMENT AND LAYOUT PLUS THE SAFE USE OF PORTABLE EQUIPMENT, STUDENTS WILL DEVELOP BASIC CONSTRUCTION SKILLS CONSTRUCTING TEAM PROJECTS INVOLVING FOUNDATION SYSTEMS, FLOOR, WALL AND ROOF FRAMING. 4 HOURS LECTURE AND 4 HOURS LABORATORY.

## CONSTRUCTION II PREREQUISITES: CON I OR CONSENT
### 5 CREDITS- 8 CONTACT HOURS

THIS IS A CONTINUATION OF CONSTRUCTION II. AFTER DEMONSTRATING SUFFICIENT SKILLS AND UNDERSTANDING OF SAFE TOOLS AND EQUIPMENT USE, THE STUDENTS WILL TEAM UP TO DEVELOP SKILLS THAT INCLUDE INSTALLATION OF FLOOR COVERING SYSTEMS, DOOR AND WINDOW INSTALLATION, DRYWALL INSTALLATION, EXTERIOR WALL COVERING SYSTEMS AND ROOFING SYSTEMS APPLICATION. TEAR DOWN AND DEMOLITION ARE IMPORTANT ELEMENTS OF THIS COURSE.  4 HOURS LECTURE AND 4 HOURS LABORATORY.

## CONSTRUCTION III –PREREQUISITE: –CON I AND II OR CONSENT
### 4 CREDITS-4 CONTACT HOURS

THIS COURSE COVERS THE BROAD RANGE OF COMMON CONSTRUCTION MATERIALS INCLUDING RECENT TECHNOLOGICAL DEVELOPMENTS IN STRUCTURAL SUPPORT, SOUND CONTROL, INSULATION AND EXTERIOR COVERINGS.  STUDENTS WILL BE INTRODUCED TO BASIC CONCEPTS OF ESTIMATING AND A FURTHER STUDY OF RESIDENTIAL AND LIGHT COMMERCIAL PRINTREADING.  FURTHER DEVELOPMENT OF TECHNICAL VOCABULARY SKILLS ARE INCLUDED. 4 HOURS LECTURE.

## CONSTRUCTION IV – PREREQ: CON I, II, AND III  OR CONSENT
### 4 CREDITS–4 CONTACT HOURS

THIS COURSE INTRODUCES THE STUDENT TO BASIC CONCEPTS OF PROJECT MANAGEMENT INCLUDING A FURTHER STUDY OF ESTIMATING AND BID PREPARATION, SCHEDULING BASICS, JOBSITE MANAGEMENT CONCEPTS AND AN INTRODUCTION TO BUILDING CODES.  4 HOURS LECTURE.

STUDENTS ARE REQUIRED TO COMPLETE A TWO CREDIT CON 174 OR CON 199, CO-OP OR INTERNSHIP IN THE SPRING/SUMMER TERM.