High-Reliability Soldering
CETT 1204 Section 43001
2 Credit Hours

Lecture  TBA  TBA  Room L102
Lab     TBA  TBA  Room L102

Instructor: Clay Rawlins

Contact Information:
Office: L101
Phone: 972-860-7683
Email address: crawlins@dccc.edu
Hours Available: Posted Office Hours & by Appointment

Course Description

**CETT 1204  High-Reliability Soldering (2)**
This is a WECM Course Number.
Instruction in this course will teach high reliability soldering, desoldering, circuitry repair, plated-thru-hole repairs, conformal coating removal, industry standards, electrostatic discharge (ESD) control, surface mount device (SMD) installation, removal and replacement using hand held systems or reflow workstations. Students will solder highly reliable connections; solder to industry standards; desolder connections; install surface mount devices; remove surface mount devices; remove conformal coatings; repair and/or replace traces, pads, and eyelets. (1 Lec., 2 Lab.)

Textbooks and Other Course Materials:

PC015 Eastfield Soldering Kit (Available in Campus Bookstore)
Developmental Courses

The Texas Success Initiative (TSI) is a statewide program designed to ensure that students enrolled in Texas public colleges and universities have the basic academic skills needed to be successful in college-level course work. The TSI requires assessment, remediation (if necessary), and advising of students who attend a public college or university in the state of Texas. The program assesses a student’s basic academic skills in reading, writing, and math. Passing the assessment is a prerequisite for enrollment in many college-level classes such as English 1301/1302, History 1301/1302, Math 1414, etc. Students who do not meet assessment standards may complete prerequisite requirements by taking developmental courses in the deficient area and passing them with a grade of C or higher. In some cases retesting will also be required. It is up to each student to be aware and informed about requirements that are subject to change. Additional information is available from the TSI Office.  
https://www1.dcccd.edu/cat0910/admiss/tsi.cfm?loc=4

Course Objectives:

The purpose of this course is to provide the student with a thorough knowledge of the theory and application of surface mount soldering as related to the following areas:

1. Surface Mount Assemblies
2. Identification of Surface Mount Components
3. Purpose and Use of Flux
4. Purpose and Use of different types of Solder & Solder Paste
5. Identify Appropriate Precautions when Soldering
6. Explore different heating methods for Surface Mount Soldering
7. Identify Effects & Methods of Prevention of Oxidation
8. Chip Components Rework
9. Gull Wing Components Rework
10. J-Lead Rework

Students will be provided with the facilities, equipment, instruction, and assignments necessary to enable them to accomplish the course objectives.

End-of-Course Outcomes: Solder highly reliable connections; solder to industry standards; desolder connections; install surface mount devices; remove surface mount devices;

1. Properly solder and remove through hole components from a PC board.
2. Properly solder and remove surface mount chip components from a PC board.
3. Properly solder and remove surface mount gull wing and J-lead components from a PC

70% of the Students will exhibit accomplishment of outcomes by scoring a minimum cumulative quiz average of 70% on quizzes along with an overall course procedure average of at least 70% (procedures evaluated to IPC-A-610 standards).
Evaluation Procedures:

All Videos (VT-91 to VT-94) must be viewed and Quizzes 1 through 6 must be completed. All component installations, removals and preparations must be completed and all work must be inspected by the course instructor of record. All work must be performed such that it meets as close to IPC-A-610 and ANSI/J-STD-001 standards as possible. The relative weight of each of the grading components of the course is outlined below:

- Quizzes (weighted equally) 40 %
- Lab Procedures (weighted equally) 60 %

The course grade will be calculated as follows:

\[
\text{Quiz Average} = \frac{\text{Quiz 1} + \text{Quiz 2} + \ldots + \text{Quiz 5}}{5}
\]

\[
\text{Procedure Average} = \frac{\text{Proc. 1} + \text{Proc. 2} + \ldots + \text{Proc. 8}}{8}
\]

Obtaining Final Course Grades Using eConnect

Final Grade Reports are no longer mailed. Convenient access is available online at [www.econnect.dcccd.edu](http://www.econnect.dcccd.edu). Use your student identification number to log onto eConnect. This online system provides you with timely information regarding your college records.

Eastfield College Email Policy

Faculty and students must have and use a DCCCD account for all correspondence relating to academic coursework. For information on setting up a DCCCD student email account go to: [http://www.dcccd.edu/netmail/home.html](http://www.dcccd.edu/netmail/home.html)
<table>
<thead>
<tr>
<th>WEEK</th>
<th>DATE</th>
<th>TOPIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1-22</td>
<td>Course Orientation</td>
</tr>
<tr>
<td>2</td>
<td>1-29</td>
<td>View VT-91</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Take Quiz 1</td>
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<tr>
<td>3</td>
<td>2-4</td>
<td>View VT-92 Part I</td>
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<tr>
<td></td>
<td></td>
<td>Take Quiz 2</td>
</tr>
<tr>
<td>4</td>
<td>2-11</td>
<td>Install through hole components R1 to R6, C1 to C6, Q1 to Q9 &amp; U1 to U3</td>
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<tr>
<td>5</td>
<td>2-18</td>
<td>View VT-92 Part II</td>
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<tr>
<td></td>
<td></td>
<td>Take Quiz 3</td>
</tr>
<tr>
<td>6</td>
<td>2-25</td>
<td>Install 1st half of Chip Components D1 to D6 &amp; R7 to R12</td>
</tr>
<tr>
<td>7</td>
<td>3-4</td>
<td>Install 2nd half of Chip Components C7 to C12 &amp; C13 to C18</td>
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<tr>
<td>8</td>
<td>3-11</td>
<td>View VT-93 Part I</td>
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<tr>
<td></td>
<td>3-18</td>
<td>Spring Break</td>
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<tr>
<td>9</td>
<td>3-25</td>
<td>View VT-93 Part II</td>
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<td></td>
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<td>Take Quiz 4</td>
</tr>
<tr>
<td>10</td>
<td>4-1</td>
<td>Install Gull-Wing Components Q10 to Q15 &amp; U4 to U11</td>
</tr>
<tr>
<td>11</td>
<td>4-8</td>
<td>View VT-94</td>
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<td></td>
<td></td>
<td>Take Quiz 5</td>
</tr>
<tr>
<td>12</td>
<td>4-15</td>
<td>Install J-Lead Components U12 to U15</td>
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</tbody>
</table>

*Submit fully populated board for assessment prior to removal of any components.*

| 13   | 4-22   | Remove half of Chip and Gull-Wing Components                          |
| 14   | 4-29   | Remove half of J-Lead Components                                      |
| 15   | 5-6    | Remove half of Thru-Hole Components                                   |
| 16   | 5-13   | Submit Board for Final Evaluation                                     |
Attendance Policy:

Students are expected to regularly attend all classes in which they are enrolled. Students have the responsibility to consult with the instructor when an absence occurs. Senate Bill 738 authorizes students to be absent for religious holy days. Students planning such absences are required to submit written notification to their instructors during the first 5 days of the term. Students absent for approved religious holy days will be allowed to complete work missed.

Students who are receiving any form of financial aid should check with the Financial Aid Office prior to withdrawing from classes. Withdrawals may affect your eligibility to receive further aid and could cause you to be in a position of repayment for the current semester. Students who fail to attend or participate after the drop date are also subject to this policy.

Financial Aid Statement for Distance Learning Classes

If you are receiving Financial Aid grants or loans and are enrolled in a Distance Learning class, you must show participation in this class prior to the certification date by either e-mailing or contacting the instructor or logging on to eCampus. Do not drop or stop attending any class without consulting the Financial Aid Office. Changes in your enrollment level and failing grades may require that you repay financial aid funds.

Repeating This Course: (Third Attempt to Enroll in a Course)

Effective for Fall Semester 2005, the Dallas County Community Colleges will charge additional tuition to students registering the third or subsequent time for a course. All third and subsequent attempts of the majority of credit and Continuing Education/Workforce Training courses will result in additional tuition to be charged. Developmental Studies and some other courses will not be charged a higher tuition rate. Third attempts include courses taken at any of the Dallas County Community Colleges since the Fall 2002 Semester. See Third Attempt to Enroll in a Course at: http://www.dcccd.edu/thirdcourseattempt/
Academic Honesty Statement

Scholastic dishonesty is a violation of the Code of Student Conduct. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion. As a college student, you are considered a responsible adult. Your enrollment indicates acceptance of the DCCCD Code of Student Conduct publishe in the DCCCD Catalog at http://www1.dcccd.edu/cat0506/ss/code.cfm

Academic dishonesty includes, but is not limited to, cheating on tests, plagiarism and collusion. Cheating includes copying from another student’s test or homework paper, using materials not authorized, collaborating with or seeking aid from another student during a test, knowingly using, buying, selling, stealing, or soliciting the contents of an unadministered test, and substituting for another person to take a test. Plagiarism is the appropriating, buying, receiving as a gift, or obtaining by any means another's work and the unacknowledged submission or incorporation of it in one’s own written work. Collusion is the unauthorized collaboration with another person in preparing written work for fulfillment of course requirements. Academic dishonesty is a serious offense in college. You can be given a failing grade on an assignment or test, can be failed for the class, or you can even be suspended from college.

Food and Drink Policy
Food, drinks, and tobacco products are prohibited in Eastfield College classrooms.

ADA Statement

Students with a physical, mental or learning disability who require accommodations should contact the college Disability Services Office in C237. Call 972.860.8348 or email efcdso@dcccd.edu. For more information: http://www.eastfieldcollege.edu/SSI/DSO/index.html

Religious Holidays
Absences for observance of a religious holy day are excused. A student whose absence is excused to observe a religious holy day is allowed to contract with the instructor to take a make-up examination or complete an assignment within a reasonable time after the absence.

Withdrawal Policy

If you are unable to complete this course, it is your responsibility to withdraw formally. The withdrawal request must be received in the Registrar’s Office by April 18, 2013. Failure to do so will result in your receiving a performance grade, usually an “F.” If you drop a class or withdraw from the college before the official drop/withdrawal deadline, you will receive a “W” (Withdraw) in each class dropped. For more information about drop deadlines, refer to the current printed Credit Class Schedule, contact the Admissions/Registrar’s Office at 972-860-7167 (Room C119), or contact the division office.
STOP BEFORE YOU DROP

For students who enrolled in college level courses for the first time in the fall of 2007, Texas Education Code 51.907 limits the number of courses a student may drop. You may drop no more than 6 courses during your entire undergraduate career unless the drop qualifies as an exception. Your campus counseling/advising center will give you more information on the allowable exceptions. Remember that once you have accumulated 6 non-exempt drops, you cannot drop any other courses with a “W”. Therefore, please exercise caution when dropping courses in any Texas public institution of higher learning, including all seven of the Dallas County Community Colleges. For more information, you may access: https://www1.dcccd.edu/coursedrops

Family Educational Rights and Privacy Act of 1974 (FERPA)
In compliance with the Family Educational Rights and Privacy Act of 1974 (FERPA), the College may release information classified as “directory information” to the general public without the written consent of the student. Directory information includes: (1) student name, (2) student address, (3) telephone numbers, (4) date and place of birth, (5) weight and height of members of athletic teams, (6) participation in officially recognized activities and sports, (7) dates of attendance, (8) educational institution most recently attended, and (9) other similar information, including major field of student and degrees and awards received. Students may protect their directory information at any time during the academic year. If no request is filed, directory information is released upon written inquiry. No telephone inquiries are acknowledged. No transcript or academic record is released without written consent from the student, except as specified by law.

Classroom Etiquette

Enrollment in this class indicates acceptance of the standards of conduct published in the current edition of the Eastfield College Catalog. Any disruptive behavior in the classroom is not acceptable and will not be tolerated.

The instructor reserves the right to amend this syllabus as necessary.