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| Spring 2013Mitchell Technical Institute SyllabusIC-106 Intro To Motor Controls | | | | |
| Instructor Information | | | | |
| **Instructor:** | **Dale Moke** | | **Work Phone:** | 605-995-7314 |
| **Office:** | Rm 136 | |  |  |
| **Address:** | Mitchell Technical Institute | | **Email:** | ***dale.moke@mitchelltech.edu*** |
|  | 1800 Spruce Street | |  | |
|  | Mitchell, SD 57301 | |  | |
| Course Information | | | | |
| **Course title and number:** | | **IC-106 Intro to Motor Controls** | | |
| **Required Text:** | | Industrial Control Electronics: Devices, Systems, and Applications  3rd Edition   Bartelt; Terry Electrical Motor Controls for Integrated Systems  4th Edition    Rockis; Gary and Mazur; Glen Electrical Wiring Industrial  14th Edition     Herman; Stephen | | |
| **Prerequisites:** | |  | | |
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| **Course Description:** | | Controls language, with an understanding of electrical symbols, wiring, and ladder diagrams. How electrical devices function, in relation to one another, in control logic circuits, Major types of timers and timing circuits and various types of control devices used in common control circuits. | | |
| **Credit Hours:** | | 3.00 | | |
| **Core Abilities:** | |  | | |
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| **Competencies:** | |  | | |
| 1. Identify Electrical Symbols and Abbreviations | | | | |
| 1. Identify diagram types | | | | |
| 1. Differentiate electrical circuits | | | | |
| 1. Break down Line Diagram Layout | | | | |
| 1. Describe references in a line diagram | | | | |
| 1. Differentiate the three basic sections of the line diagram | | | | |
| 1. Determine circuit logic functions | | | | |
| 1. Identify troubleshooting methods and faults | | | | |
| 1. Explain electromechanical relay construction | | | | |
| 1. Differentiate solid-state switching methods | | | | |
| 1. Compare electromechanical relays and solid-state relays | | | | |
| 1. Describe troubleshooting electromechanical relay circuits | | | | |
| 1. Describe solid-state relay circuit troubleshooting | | | | |
| 1. Summarize manual contactor's usage and construction | | | | |
| 1. Summarize manual starters | | | | |
| 1. State two types of magnetic contactor wiring | | | | |
| 1. Describe types of magnetic motor starter overload protection | | | | |
| 1. Describe reversing of different motor types | | | | |
| 1. Explain reversing motors with drum switches | | | | |
| 1. Discuss types of interlocking for motor reversing | | | | |
| 1. Examine magnet motor starter reversing applications | | | | |
| 1. Describe motor control wiring methods | | | | |
| 1. Generalize reversing circuits troubleshooting procedures | | | | |
| 1. State categories of timers | | | | |
| 1. Differentiate between timing functions | | | | |
| 1. Identify types of controlled timers | | | | |
| 1. State procedures of troubleshooting timing circuits | | | | |
| 1. Describe counter functions | | | | |
| Grading Information | | | | |
| A | | 100-90 | | |
| B | | 89-80 | | |
| C | | 79-70 | | |
| D | | 69-60 | | |
| F | | 59-0 | | |
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| Course Schedule | | | | |
| **Week** | | **Coursework** | | |
| Week #1 | | Review Questions 25 | | |
|  | | Lab Project 20 | | |
|  | | Troubleshoooting 30 | | |
|  | | Test 40 | | |
| Week #2 | |  | | |
|  | | Review Questions 25 | | |
|  | | Worksheet 10 | | |
|  | | Lab Project 20 | | |
|  | | Troubleshoooting 30 | | |
| Week #3 | |  | | |
|  | | Review Questions 20 | | |
|  | | Worksheet 10 | | |
|  | | Lab Project 20 | | |
|  | | Troubleshoooting 30 | | |
|  | | Test 40 | | |
| Week #4 | |  | | |
|  | | Worksheet 10 | | |
|  | | Lab Project 20 | | |
|  | | Troubleshoooting 30 | | |
| Week #5 | |  | | |
|  | | Review Questions 25 | | |
|  | | Lab Project 20 | | |
|  | | Troubleshoooting 30 | | |
|  | | Test 40 | | |
| Week #6 | |  | | |
|  | | Worksheet 10 | | |
|  | | Lab Project 20 | | |
|  | | Troubleshoooting 30 | | |
| Week #7 | |  | | |
|  | | Review Questions 20 | | |
|  | | Lab Project 20 | | |
|  | | Troubleshoooting 30 | | |
|  | | Test 50 | | |
| Week #8 | |  | | |
|  | | Review Questions 15 | | |
|  | | Lab Project 20 | | |
|  | | Troubleshoooting 30 | | |
|  | | Test 40 | | |
| Week #9 | |  | | |
|  | | Worksheet 10 | | |
|  | | Lab Project 20 | | |
|  | | Troubleshoooting 30 | | |
| Week #10 | |  | | |
|  | | Review Questions 25 | | |
|  | | Worksheet 10 | | |
|  | | Lab Project 20 | | |
|  | | Troubleshoooting 30 | | |
|  | | Test 40 | | |
| Week #11 | |  | | |
|  | | Worksheet 10 | | |
|  | | Lab Project 30 | | |
|  | | Troubleshoooting 60 | | |
|  | | Final Test 100 | | |
| **Total Points** | | **1165** | | |
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| Course Schedule | | | | |
| **Online** | |  | | |
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| Mitchell Technical Institute Policies | | | | |
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| **Attendance Guidelines:** | | | | |
| Enrollment at MTI assumes maturity, seriousness of purpose, and self-discipline. In accordance with MTI On-line Program’s attendance policy, students must actively participate at least once per week to be counted present in their online course. Simply logging into the course is not considered attendance; therefore, failure to actively participate weekly may result in withdrawal from the course after two consecutive weeks of non-attendance.  Online students are required to actively participate in a weekly activity in order to be counted present. Weekly activities may include completing a quiz, posting a substantial discussion post or taking a test. The online courses are designed to include at least one of these items per week, please refer to the course schedule within the online classroom for the weekly requirements.  Weekly participation in online classes is critical to each student’s academic success. Failure to participate in weekly activities may affect a student’s academic performance; furthermore, it may also result in administrative withdrawal.  Participation within the online courses can be verified through the student’s access to the secured host site. As a result, the student’s participation is permanently recorded through the learning management system.  If you are ill or have a family emergency, you must contact the instructor and the school as soon as possible in order to make alternative arrangements for any assignment. Please be aware that submitting assignments on time contributes to your course grade. If you miss an assignment your grade may be affected. As a student, it is your responsibility to alert the instructor to any unavoidable absences and to keep up with the required assignments. If you know you will miss or be late with an assignment in advance, you must turn in the required assignment before the absence in order to receive full credit. If you have not made alternative arrangements with your instructor, your assignment will be graded as late. It is your responsibility to refer to the syllabus, coursework and/or contact the instructor or colleague if you have questions about your assignments. | | | | |
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| **Academic Integrity:** | | | | |
| Students are expected to do their own work unless advised that collaboration is acceptable. When taking a test, students are expected to keep their eyes on their own tests and protect their tests from being copied by classmates. To avoid plagiarism when using facts, quotes or ideas from another person or source, students must cite the source they used, even if they rephrase the content in their own words. Failure to use proper citation procedures is considered plagiarism.  Students should be given a grade of "0" if the plagiarism is flagrant and/or deliberate. Copying from another person's paper or test is academic dishonesty; it should also result in a grade of "0" for that assignment. | | | | |
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| **ADA Statement:** | | | | |
| I wish to fully include persons with disabilities in this course.   Please let me know if you need any special accommodations in the instruction or assessments of this course to enable you to fully participate.  The Americans with Disabilities Act (ADA) is a federal antidiscrimination statute that provides comprehensive civil rights protection for persons with documented disabilities.  It is the responsibility of the student to contact the MTI Disabilities Coordinator at 995-3023 to further coordinate accommodations. | | | | |
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| **Online Communication:** | | | | |
| In a cyber-community, you present yourself and learn about others through written words.  You don't need to be a prize-winning author or poet to successfully communicate in an online community; however you do want to present yourself in a positive light and to communicate your thoughts and ideas effectively.  The following guidelines will help you ensure that you are properly understood, get your points across effectively, avoid getting anybody annoyed, and avoid looking like a "beginner" on the net.  1.  Format your posting so that it is easy to read.  Use short paragraphs separated by blank lines.  Don't write everything in uppercase (capital) letters.  It is more difficult to read and, even worse, in an online environment it means you are SHOUTING.  2.  Be brief. Plan your messages ahead so that you don't ramble.  3.  Be clear.  Don't use abbreviations or acronyms that others may not understand. Read your messages over before sending them.  4.  Check your spelling.  People will not take you seriously, no matter how brilliant your ideas, if your writing is full of misspellings. Use your computer's Spell Check features; then read over what you have written to catch errors that Spell Check misses.  5.  When you are interacting with others online through the written word, remember that things may "sound" harsh or less friendly when the reader cannot see your smile or the twinkle in your eye.  Read your messages over to be sure they are diplomatic and polite. | | | | |
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| **Online Instructor Role and Responsibilities:** | | | | |
| As your instructor, I am responsible for providing an environment in which an opportunity for learning exists. I will work with you and assist you in your quest for understanding. I cannot make you learn anything. As a resource person and facilitator, I will organize the course, schedule learning activities, and evaluate the short-run "products" of your learning process. Recognizing that even asynchronous online communication is time sensitive, I will monitor threaded discussions and respond to queries within 48 hours of the time they were posted. Some assignments may take a little longer for me to assess. I will be giving your work, as well as that of your fellow learners, careful consideration. | | | | |
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| **Online Learner Role and Responsibilities:** | | | | |
| You are an adult learner and as such you are responsible for your own learning. No one else can be a "stand in" for you in the learning process. You will be held accountable for all assigned activities. You matter and what you do does make a difference. You will have an opportunity to share your unique ideas and experiences with your course mates and instructor. The form and content of your participation will determine the level of achievement, satisfaction, and enjoyment that you experience. Because others are depending on you to keep the course moving, you have an obligation to meet deadlines for completing assignments and postings. | | | | |
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| **Instructor's Right:** | | | | |
| The instructor reserves the right to assign additional coursework, change topic dates, assignment dates, and quiz/test dates, and to provide additional materials/assignments as deemed appropriate. | | | | |