

## GMTCC Electrical Curriculum Map FY 16

| <b>Program/Course</b>  | <b>Electrical Technology</b>                               |   |   |   |   |  |
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| <b>Unit<br/>Estimated Quarter</b>  | <b>Technical<br/>Concepts</b>                              | <b>Technical<br/>Power<br/>Standards and<br/>Indicators<br/>Reference</b> | <b>Embedded<br/>Credit<br/>Concepts</b> | <b>Embedded<br/>Credit Power<br/>Standards and<br/>Indicators<br/>Reference<br/>GMTCC<br/>Math &amp; Science<br/>Standards and<br/>Indicators</b> | <b>21<sup>st</sup> Century<br/>Indicators</b>   | <b>Targeted<br/>Assessments</b>                          |
|  | <i>VT DOE<br/>Building<br/>trades core</i>                 | <i>VT DOE<br/>Building trades<br/>core</i>                                | <i>VT DOE<br/>Standards Areas</i>       |   | 1) Quadrant Tasks<br>2) Skills Tool<br>3) Entrepreneurial<br>4) Literacy<br>5) Computer<br>Technology | 1. Introduced<br>2. Basic<br>3. Proficient<br>4. Mastery |
| Safety Unit, Lockout-Tagout, Test Post<br>OSHA, Safety Test, Electrical Test Meters<br>1 <sup>st</sup> Quarter   | Construction<br>Construction<br>Construction<br>Electrical | B.001-A.025<br>D.001-D.003<br>E.001-D.003<br>A.001-A.004                  | Math<br>Science                         | 7.10F<br>7.2 B  | 1, 2, 3,  | 4  |
| Integrated Math Class twice a week 1 hour<br>through the year  | Construction   | C.001-C.008   | Math                                    | 7.6 , 7.7, 7.8, 7.9,<br>& 7.10 All  | 1, 2, 3, 5  | 3,4  |
| Unit 1 Atomic Structure<br>1 <sup>st</sup> Quarter Delmar's  | Electrical   | D.001   | Math<br>Science                         | 7.3 All,<br>7.12 All  | 1, 2  | 2,3  |
| Unit 2 Electrical Quantities and Ohm's Law<br>1 <sup>st</sup> Quarter Delmar's   | Electrical   | D.002-D.010   | Math<br>Science                         | 7.8 All<br>7.12 A-E   | 1, 2, 3, 4, 5   | 3,4  |
| Chapter. 2. Electrical Symbols and Outlets<br>1 <sup>st</sup> Quarter Electrical Wiring Residential<br>(EWR)   | Electrical   | J.001-J.008   |   |   | 1, 2, 3, 4, 5   | 3,4  |
| Chapter. 4. Conductor Sizes and Types,<br>Wiring Methods, Wire Connections,<br>Voltage Drop, Neutral Sizing for Services<br>1 <sup>st</sup> Quarter Delmar's | Electrical   | I.001-I.015   | Math<br>Science                         | 7.6, 7.8, 7.10 All<br>7.6 All   | 1, 2, 3, 4, 5   | 3,4  |

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| Chapter 1. General Information for Electrical Installations<br>1 <sup>st</sup> Quarter EWR   | Electrical | G.001-G.005                  | Math            | 7.10 F                         | 1, 2, 3, 4, 5 | 3,4 |
| Chapter 33. Residential Utility Interactive Photovoltaic Systems<br>1 <sup>st</sup> Quarter EWR  | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4    | 3,4 |
| Unit 3 Static Electricity<br>1 <sup>st</sup> Quarter Delmar's  | Electrical | D.002                        | Math<br>Science | 7.6 A,F<br>7.4 B               | 1, 2          | 2   |
| Unit 4 Magnetism<br>1 <sup>st</sup> Quarter Delmar's   | Electrical | D.002                        | Science         | 7.3 All, 7.4 All               | 1, 2          | 2   |
| Unit 5 Resistors<br>1 <sup>st</sup> Quarter Delmar's   | Electrical | E.006-E.008<br>F.001-003     | Math<br>Science | 7.8 G,H,I<br>7.2 A             | 1, 2          | 3,4 |
| Unit 6 Series Circuits<br>2 <sup>nd</sup> Quarter Delmar's   | Electrical | E.001, E.006                 | Math<br>Science | 7.2 A, 7.6 All<br>7.8 All      | 1, 2,         | 3   |
| Unit 7 Parallel Circuits<br>2 <sup>nd</sup> Quarter Delmar's   | Electrical | E.002, E.007                 | Math<br>Science | 7.2 A, 7.6 All<br>7.8 All      | 1, 2          | 3   |
| Unit 8 Combination Circuits<br>2 <sup>nd</sup> Quarter Delmar's  | Electrical | E.003, E.008                 | Math<br>Science | 7.2 A, 7.6 All<br>7.8 All      | 1, 2          | 3   |
| Chapter 3. Determining the Required Number and Location of Lighting and Small-Appliance Circuits<br>2 <sup>nd</sup> Quarter EWR  | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4    | 3,4 |
| Chapter 5. Switch Control of Lighting Circuits, Receptacle Bonding, and Induction Heating Resulting from Unusual Switch Connections<br>2 <sup>nd</sup> Quarter EWR   | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4    | 3,4 |
| Chapter 6. Ground-Fault Circuit Interrupters, Arc-Fault Circuit Interrupters, Transient Voltage Surge Suppressors, Immersion Detection Circuit Interrupters, and Appliance Leakage Circuit Interrupters<br>2 <sup>nd</sup> Quarter EWR | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4    | 3,4 |

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| Chapter 7. Luminaires, Ballasts, and Lamps<br>2 <sup>nd</sup> Quarter EWR  | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 8. Lighting Branch Circuit for the<br>Front Bedroom<br>2 <sup>nd</sup> Quarter EWR                       | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 26. Smoke, Heat, and Carbon<br>Monoxide Alarms, and Security Systems<br>2 <sup>nd</sup> Quarter EWR      | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 9. Lighting Branch Circuit for the<br>Master Bedroom<br>2 <sup>nd</sup> Quarter EWR                      | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 10. Lighting Branch Circuits –<br>Bathrooms, Hallways<br>2 <sup>nd</sup> Quarter EWR                     | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 11. Lighting Branch Circuit –Front<br>Entry, Porch<br>3 <sup>rd</sup> Quarter EWR                        | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 12. Lighting Branch Circuit &<br>Small Appliance Circuits for the Kitchen<br>3 <sup>rd</sup> Quarter EWR | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 13. Lighting Branch Circuit for the<br>Living Room<br>3 <sup>rd</sup> Quarter EWR                        | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 14. Lighting Branch Circuit for the<br>Study/Bedroom<br>3 <sup>rd</sup> Quarter EWR                      | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |

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| Chapter 15. Dryer Outlet, Lighting & Receptacle Circuits for the Laundry, Power Room, Rear Entry Hall, and Attic<br>3rd Quarter EWR | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 29. Service entrance Calculations<br>3rd Quarter EWR  | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 16. Lighting Branch Circuit for the Garage<br>3rd Quarter EWR   | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 17. Recreation Room<br>3rd Quarter EWR  | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 18. Lighting Branch Circuit, Receptacles Circuits for Workshops.<br>3rd Quarter EWR   | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 19. Special Purpose Outlets<br>3rd Quarter EWR  | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 20. Range, Counter Mounted Cooktops, and Wall Ovens<br>3rd Quarter EWR  | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 21. Food Waste Disposer, Dishwasher Outlets<br>4th Quarter EWR  | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 22. Heat/Vent/Lights, Attic Fan, and Hydromassage Tub<br>4th Quarter EWR  | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |

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| Chapter 27. Service Entrance Equipment<br>4th Quarter EWR                                | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 28. Overcurrent Protection, Fuses<br>and Circuit Breakers<br>4th Quarter EWR     | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 23. Electric Heating, Air<br>Conditioning<br>4th Quarter EWR                     | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 24. Gas and Oil Central Heating<br>Systems<br>4th Quarter EWR                    | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 25. Television, Telephone, Low<br>Voltage Signal Systems<br>4th Quarter EWR      | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 30. Swimming Pools, Spas, Hot<br>Tubs, and Hydromassage Baths<br>4th Quarter EWR | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 31. Wiring for Future: Home<br>Automation Systems<br>4th Quarter EWR             | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
| Chapter 32. Standby Power Systems.<br>4th Quarter EWR                                    | Electrical | H, I, J, K, L<br>All section | Math<br>Science | 7.6 All<br>7.8 All<br>7.10 All | 1, 2, 3, 4 | 3,4 |
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| Unit 26 Atomic Structure<br>4th Quarter Delmar's<br>Only if needed to fill time | Electrical | D.001 | Math<br>Science | 7.3 All,<br>7.12 All | 1, 2 | 2,3 |
| Unit 27 Atomic Structure<br>4th Quarter Delmar's<br>Only if needed to fill time | Electrical | D.001 | Math<br>Science | 7.3 All,<br>7.12 All | 1, 2 | 2,3 |
| Unit 28 Atomic Structure<br>4th Quarter Delmar's<br>Only if needed to fill time | Electrical | D.001 | Math<br>Science | 7.3 All,<br>7.12 All | 1, 2 | 2,3 |
| Unit 32 Atomic Structure<br>4th Quarter Delmar's<br>Only if needed to fill time | Electrical | D.001 | Math<br>Science | 7.3 All,<br>7.12 All | 1, 2 | 2,3 |