Building Inspection Technology

Overview

This CRC program has been developed to prepare individuals for employment in building inspection. Graduates may be employed by contractors, government agencies, architects, finance companies and developers. A wide variety of employment opportunities exist in the fast-growing construction industry in the Sacramento Valley.

Program Maps

- Building Inspection Technology, A.S. Degree (/crc/main/doc/programs/program-maps/building-inspection-tech-as.pdf)
- Building Inspection Technology, Certificate of Achievement (/crc/main/doc/programs/program-maps/building-inspection-tech-cert.pdf)

Dean
Colette Harris-Mathews (/about-us/contact-us/faculty-and-staff-directory/colette-harris-mathews)

Department Chair
Ryan Connally (/about-us/contact-us/faculty-and-staff-directory/ryan-connally)

Career and Academic Community
Automotive, Construction and Design Technology (/academics/career-and-academic-communities/automotive-construction-and-design-technology)

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Associate Degrees

A.S. in Building Inspection Technology

This CRC program has been developed to prepare individuals for employment in building inspection. Graduates may be employed by contractors, government agencies, architects, finance companies and developers.

A wide variety of employment opportunities exist in the fast-growing construction industry in the Sacramento Valley.

HIGHLIGHTS

*Field trips to a variety of construction sites to study inspection technologies and code interpretations (Instructor Option)

*Association with instructors who are county and city building officials and inspectors

Catalog Date: June 1, 2020

Degree Requirements

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<thead>
<tr>
<th>COURSE CODE</th>
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<tbody>
<tr>
<td>BIT 100</td>
<td>Introduction to the International Building Code</td>
<td>3</td>
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<tr>
<td>BIT 101</td>
<td>Introduction to the International Residential Code</td>
<td>3</td>
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<tr>
<td>BIT 102</td>
<td>Building Inspection Principles for Disabled Access</td>
<td>3</td>
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<tr>
<td>BIT 120</td>
<td>Mechanical I/Plumbing Code Requirements</td>
<td>3</td>
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<tr>
<td>BIT 121</td>
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<td>Residential Electrical Code Requirements</td>
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<tr>
<td>CMT 310</td>
<td>Materials of Construction</td>
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A minimum of 18 units from the following:

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<thead>
<tr>
<th>COURSE CODE</th>
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<tbody>
<tr>
<td>BIT 102</td>
<td>Plan Reading and Non-Structural Plan Review (3)</td>
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<tr>
<td>BIT 104</td>
<td>International Building Code - Fire &amp; Life Safety (3)</td>
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<tr>
<td>BIT 106</td>
<td>Introduction to Special Inspection- Concrete, Masonry, Steel, and Soils (3)</td>
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<td>BIT 130</td>
<td>Introduction to Inspection of Wood Frame Construction (3)</td>
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<td>BIT 141</td>
<td>Commercial Electrical Code Requirements (3)</td>
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<tr>
<td>BIT 150</td>
<td>California Energy Code – Building Energy Efficiency Standards (3)</td>
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<td>HERS I, Field Verification and Diagnostic Testing for Code Compliance (3)</td>
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<tr>
<td>BIT 154</td>
<td>California Green Building Standards Code (3)</td>
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</table>

Total Units: 39

The Building Inspection Technology Associate in Science (A.S.) degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See CRC graduation requirements.

Student Learning Outcomes

Upon completion of this program, the student will be able to:
Interpret the model building codes: Interpret the model building codes and summarize the origins and evolution of building codes in this country. Identify the origin and organization of the model building codes. Interpret code requirements for plans, permits and inspections. Diagnose code compliance with a minimum of 80% accuracy, congruent with industry certification. (PSLO 1)

Analyze a set of construction drawings to determine completeness/code compliance: Analyze a set of construction drawings to determine completeness and code compliance. Develop a thorough understanding of the organization and purpose of construction drawings. Recognize deficiencies in a set of construction drawings submitted for plan review. (PSLO 2)

Develop skills and competencies: Develop skills and competencies for effective and competitive workforce performance. (PSLO 3)

Apply specific and measurable career and/or workforce learning objectives: Apply specific and measurable career and/or workforce learning objective through classroom study and independent assignments. (PSLO 4)

Ensure that the program is consistent with the college SLO's: Ensure that the program is consistent with the college SLO’s and is providing the students and community with a valuable and meaningful service. (PSLO 5)

Career Information

Building Inspector; Plan Checker; Construction Supervisor; Foreman; Construction Management; Government Building Official. Some career options may require more than two years of college study. Classes beyond the associate degree may be required to fulfill some career options or for preparation for transfer to a university program.

A.S. in Fire Prevention

The fire service is one of the most dynamic employers in the country. This CRC program is designed to provide the student with updated skills and knowledge necessary to complete and successfully apply for fire service positions. The curriculum serves as an in-service program as well as a pre-employment program for students seeking employment or advancement in the profession of fire prevention.

Catalog Date: June 1, 2020

Degree Requirements

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<tr>
<th>COURSE CODE</th>
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<tr>
<td>FT 300</td>
<td>Fire Protection Organization</td>
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<tr>
<td>FT 301</td>
<td>Fire Prevention Technology</td>
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<tr>
<td>FT 302</td>
<td>Fire Protection Equipment and Systems</td>
<td>3</td>
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<td>FT 303</td>
<td>Building Construction for Fire Protection</td>
<td>3</td>
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<tr>
<td>FT 304</td>
<td>Fire Behavior and Combustion</td>
<td>3</td>
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<tr>
<td>FT 498</td>
<td>Work Experience in Fire Technology</td>
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</table>

A minimum of 9 units from the following:

- BIT 100: Introduction to the International Building Code (3)
- BIT 102: Plan Reading and Non-Structural Plan Review (3)
- BIT 104: International Building Code - Fire & Life Safety (3)
- BIT 130: Introduction to Inspection of Wood Frame Construction (3)

Total Units: 25 - 28

The student must have 1-4 units of work experience in Fire Prevention to receive a degree.

The Fire Prevention Associate in Science (A.S.) degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See CRC graduation requirements.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- PSLO #1: Comprehend the qualifications for entry level skills, the discipline and evaluation process, fire service structure, history, and culture for the field of fire prevention.
- PSLO #2: Identify and comprehend laws, regulations, codes, standards and the regulatory and advisory organizations that influence fire prevention operations.
- PSLO #3: Analyze and determine the causes of fire, extinguishing agents, stages of fire, fire development, and methods of heat transfer.
- PSLO #4: Identify and describe the common types of building construction and conditions associated with structural collapse.
- PSLO #5: Differentiate between fire detection and fire suppression systems.

Career Information

Fire Inspector, Fire Investigator, Plans Examiner, Building Inspector, Fire Prevention Specialist/Officer, Public Education Specialist/Officer, Manager, Firefighter Some Career Opportunities may require more than two years of college study. Classes beyond the associate degree may be required to fulfill some career opportunities for preparation for transfer to a university program.

Certificates of Achievement

Building Inspection Technology Certificate

This CRC program has been developed to prepare individuals for employment in building inspection. Graduates may be employed by contractors, government agencies, architects, finance companies and developers.

A wide variety of employment opportunities exist in the fast-growing construction industry in the Sacramento Valley.

HIGHLIGHTS

- Field trips to a variety of construction sites to study inspection technologies and code interpretations (Instructor Option)
- Association with instructors who are county and city building officials and inspectors

Catalog Date: June 1, 2020
Certificate Requirements

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Total Units: 33

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- Interpret the model building codes: Interpret the model building codes and summarize the origins and evolution of building codes in this country. Identify the origin and organization of the model building codes. Interpret code requirements for plans, permits and inspections. Diagnose code compliance with a minimum of 80% accuracy, congruent with industry certification. (PSLO 1)
- Analyze a set of construction drawings to determine completeness/code compliance: Analyze a set of construction drawings to determine completeness and code compliance. Develop a thorough understanding of the organization and purpose of construction drawings. Recognize deficiencies in a set of construction drawings submitted for plan review. (PSLO 2)
- Develop skills and competencies: Develop skills and competencies for effective and competitive workforce performance. (PSLO 3)
- Apply specific and measurable career and/or workforce learning objectives: Apply specific and measurable career and/or workforce learning objective through classroom study and independent assignments. (PSLO 4)
- Ensure that the program is consistent with the college SLO’s: Ensure that the program is consistent with the college SLO’s and is providing the students and community with a valuable and meaningful service. (PSLO 5)

Career Information

Building Inspector; Plan Checker; Construction Supervisor; Foreman; Construction Management; Government Building Official. Some career options may require more than two years of college study. Classes beyond the associate degree may be required to fulfill some career options or for preparation for transfer to a university program.

Green Buildings Certificate

The purpose of this certificate is to develop job skills and an understanding of green strategies for high performance buildings and livable communities. It is focused at students and professionals in the fields of architecture; construction; building management; construction management; building inspection; design technology; landscape; and planning, who want to acquire a comprehensive knowledge of an integrated, economic life-cycle approach to the design of the built environment. It includes study of green rating systems, material choices and environmental strategies for a livable, sustainable future.

Catalog Date: June 1, 2020

Certificate Requirements

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<tr>
<td>ARCH 342</td>
<td>Introduction to Green Buildings</td>
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<td>ARCH 332</td>
<td>Design Awareness (3)</td>
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<td>ARCH 334</td>
<td>Advanced Design in Three Dimensions (3)</td>
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<td>ADT 320</td>
<td>Architectural Design Technology - Building Information Modeling (BIM) I (3)</td>
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<td>ADT 322</td>
<td>Architectural Design Technology - Building Information Modeling (BIM) II (3)</td>
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<tr>
<td>BIT 150</td>
<td>California Energy Code – Building Energy Efficiency Standards (3)</td>
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<td>CONST 143</td>
<td>Photovoltaic Systems (3)</td>
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<td>ECON 306</td>
<td>Environmental Economics (3)</td>
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<td>GEOG 302</td>
<td>Environmental Studies &amp; Sustainability (3)</td>
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<td>GEOG 305</td>
<td>Global Climate Change (3)</td>
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<tr>
<td>GEOG 306</td>
<td>Weather and Climate (3)</td>
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Total Units: 18

Student Learning Outcomes

Upon completion of this program, the student will be able to:

- PSL0 1: Establish meaningful ethical, social and environmental objectives for buildings and communities based on the values of energy and resource conscious design.
- Compare and contrast societal and economic implications of utilizing renewable and non-renewable energy sources.
Building Inspection Technology (BIT) Courses

BIT 100 Introduction to the International Building Code
This basic course is designed to provide background material on which the International Building Code was founded and the legal basis for the code. Emphasis will be placed on the development and proper use of the code.

Upon completion of this course, the student will be able to:

- SLO #1: Interpret building codes and summarize the origins and evolution of building codes in this country.
- Identify the origin and organization of the International Building Code (IBC).
- Interpret IBC requirements for plans, permits and inspections.
- Analyze basic principles of occupancy classifications, types of construction, and occupancy load calculations in order to correctly apply the construction provisions.
- Describe codes governing foundations, wood structures, masonry and concrete structural elements, safety glass requirements, weatherproofing, roofing, site preparation, gypsum and plaster, and light and ventilation requirements.
- Diagnose code examples with a minimum of 80% accuracy, congruent with industry certification.

BIT 101 Introduction to the International Residential Code
This basic course is designed to provide a thorough understanding of residential construction requirements for building plan review and inspection. The course will cover the portions of the International Residential Code that have been adopted by the State of California. Emphasis will be placed on the development and proper use of the code.

Upon completion of this course, the student will be able to:

- SLO #1: Interpret the International Residential Code (IRC) and summarize the origins and evolution of building codes in this country.
- Understand the application and adoption of the IRC in California.
- Identify the origin and organization of the IRC.
- Interpret IRC requirements for plans, permits and inspections.
- Analyze basic principles of residential construction as they relate to foundations, floors, wall construction, wall covering, and roof and ceiling construction in order to correctly apply the construction provisions.
- SLO #2: Apply provisions of the International Residential Code.
- Describe codes governing foundations, floors, wall construction, wall covering, roof and ceiling assemblies and light and ventilation requirements.
- SLO #3: Apply inspection procedures by developing the ability to visualize various types of residential construction methods.
- Identify code violations in residential structures at various stages of construction.
- Define construction terms as they relate to residential construction.
- Diagnose code examples with a minimum of 80% accuracy, congruent with industry certification.

BIT 102 Plan Reading and Non-Structural Plan Review

Career Information
This certificate helps to develop the knowledge base related to sustainable green buildings and environments for the careers of architecture, construction, construction management, building inspection, horticulture, landscape architecture and architectural design technology.
This course provides a thorough understanding of the plan reading and non-structural plan review process undertaken by building departments prior to plan approval.

**Student Learning Outcomes**

Upon completion of this course, the student will be able to:

- Analyze a set of construction drawings to determine completeness and code compliance (SLO #1).
- Develop a thorough understanding of the organization and purpose of construction drawings.
- Recognize deficiencies in a set of construction drawings submitted for plan review.
- Explain how the relationships between occupancy groups, construction types and fire protection measures, both active and passive, affect the size, height and means of egress of a structure (SLO #2).
- Understand the factors that must be considered when analyzing the code imposed limitations of buildings.
- Identify the purpose and intent of the means of egress requirements found in the building code.
- Perform simple plan reviews and understand the plans examiner's role in the plan review process (SLO #3).
- List the deficiencies found in a set of drawings.
- Articulate the modifications that are required to bring the plans into compliance with the code.
- Identify the effect that the plans examiner's performance can have on the construction project.
- Diagnose code compliance with a minimum of 80% accuracy, congruent with industry certification.

**BIT 104 International Building Code - Fire & Life Safety**

This course covers the use and application of the International Building Code for construction inspection.

**Student Learning Outcomes**

Upon completion of this course, the student will be able to:

- Explain the organization, intent and purpose of the fire and life safety provisions of the International Building Code (SLO #1).
- Understand why the fire and life safety provisions of the building code are included in the International Building Code and describe the benefits derived from inclusion of these provisions.
- Locate specific sections in the International Building Code in order to provide accurate information to applicants, contractors, property owners and co-workers.
- Describe how the relationships between occupancy groups, construction types and fire protection measures, both active and passive, effect the size, height and means of egress of a structure (SLO #2).
- Understand the factors that must be considered when analyzing the code imposed limitations of buildings.
- Identify the purpose and intent of the means of egress requirements found in the building code.
- Interpret and apply the fire and life safety provision of the International Building Code while performing plan reviews and field inspections (SLO #3).
- Diagnose code examples with a minimum of 80% accuracy, congruent with industry certification.

**BIT 106 Introduction to Special Inspection- Concrete, Masonry, Steel, and Soils**

This course covers the Special Inspection requirements of chapter seventeen (17) in the International Building Code. The course will provide the technical knowledge and information necessary for Building Inspectors to oversee and approve Special Inspections performed by Special Inspectors on concrete, masonry, structural steel and soils.

**Student Learning Outcomes**

Upon completion of this course, the student will be able to:

- Review plans for compliance with the International Building Code in the follow areas: steel framing; masonry construction; and concrete construction, per the International Building Code and ACI – 318.
- Identify code violations in steel structural systems, masonry construction, and concrete construction at various stages of construction including reinforcement, placement, curing and finishing operations.
- Define terms and definitions of steel construction, masonry construction, concrete construction and soils evaluation and testing.
- Review, understand and interpret strength and durability test results as they relate to structural, masonry, concrete and steel construction.
- Analyze and review field reports for compliance with code-required inspections of structural concrete, steel, masonry construction as well as and soil compaction.
- Describe and explain strength and durability tests for concrete, masonry and structural steel.
- Understand the roles of the Project Engineer, Contractor, Owner, Building Official and Special Inspector as they relate to the code required special inspections.
This course covers the basic engineering and structural principles used in the construction industry. This course includes civil engineering, plan reading, site layout, mechanics of materials, soil fundamentals, and the construction and inspection of structural systems.

Student Learning Outcomes
Upon completion of this course, the student will be able to:

- (SLO #1) Explain the history of structural engineering and describe the role and responsibility of engineers and designers in the construction industry.
- Explain the importance of safety and professional ethics in the field of engineering and design.
- (SLO #2) Evaluate the structure of engineering materials used in construction to produce the desired properties and response in structural components and systems.
- Explain the development of design theories, approaches and methodology.
- Explain the concepts of loads, reaction, equilibrium, vertical shear and shear diagrams, static and stress formulas, section modules and flexure formula as they relate to structural design and review.
- (SLO #3) Define basic engineering principles and how they apply to plan review and construction inspection procedures.
- Analyze construction drawings to verify complete load path including gravity and lateral loads.
- Identify the strengths and limitations of construction materials and identify key components of structural systems.

BIT 112 Building Inspection Principles for Disabled Access

This is a course designed to examine the state regulations that govern the design and construction of public buildings, publicly funded living accommodations, hotels and motels, and multi-family dwellings for individuals with mobility and sensory impairments. The course is designed specifically for building inspectors to develop knowledge and skills in disabled access inspections.

Student Learning Outcomes
Upon completion of this course, the student will be able to:

- (SLO #1) Explain the legal, social and economical importance of providing accessibility to public buildings, public accommodations, commercial buildings, publicly funded housing and non-publicly funded housing.
- (SLO #2) Explain the organization, origin, development and purpose of the Americans with Disabilities Act (ADA) and Chapters 11A and 11B of the California Building Code (Title 24).
- Explain why specific requirements are included in the accessibility provisions of the California Building Code and describe the benefits derived from inclusion of these provisions.
- Explain the function of the Certified Access Specialist Program (CASp) and describe the role a CASp inspector plays in accessibility compliance.
- Locate specific sections in the California Building Code in order to provide accurate information to applicants, contractors, property owners and co-workers regarding accessibility requirements.
- Review plans and verify compliance with Title 24 accessibility requirements.
- Perform building inspections for compliance with accessibility regulations and describe common interpretations of the requirements as well as common problems that hinder compliance.
- Explain and have the ability to accurately apply the Unreasonable Hardship provision of Chapter 11B (Accessibility) in the California Building Code.

BIT 120 Mechanical I/Plumbing Code Requirements

This course covers the use and interpretation of the Uniform Plumbing Code, legal and administrative enforcement procedures, field inspection techniques and procedures, methods and techniques used in plumbing installations, emerging technologies.

Student Learning Outcomes
Upon completion of this course, the student will be able to:

- Explain the organization, origin, development and purpose of the Uniform Plumbing Code (SLO #1).
- Understand why specific requirements are included in the Uniform Plumbing Code and describe the benefits derived from inclusion of these provisions.
- Locate specific sections in the Uniform Plumbing Code in order to provide accurate information to applicants, contractors, property owners and co-workers.
- Interpret the Uniform Plumbing Code in regard to regulations, minimum standards, new methods and materials used in the plumbing industry (SLO #2).
- Apply inspection procedures by developing the ability to visualize various types of plumbing methods and identify code violations in installed plumbing systems at various stages of construction.
- Interpret and apply the provisions of the Uniform Plumbing Code while performing plan reviews and field inspections (SLO #3).
- Diagnose code examples with a minimum of 80% accuracy, congruent with industry certification.

BIT 121 Mechanical II / H.V.A.C. Code Requirements
This course covers the use and interpretation of the Uniform Mechanical Code, and legal and administrative enforcement procedures used in mechanical installations, emerging trends and technologies.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- Explain the organization, origin, development and purpose of the Uniform Mechanical Code (SLO #1).
- Explain why specific requirements are included in the Uniform Mechanical Code and describe the benefits derived from inclusion of these provisions.
- Locate specific sections in the Uniform Mechanical Code in order to provide accurate information to applicants, contractors, property owners and co-workers.
- Interpret the Uniform Mechanical Code in regard to regulations, minimum standards, new methods and materials used in mechanical systems (SLO #2).
- Apply inspection procedures by developing the ability to visualize various types of HVAC and other mechanical systems and identify code violations in installed mechanical systems at various stages of construction.
- Interpret and apply the provisions of the Uniform Mechanical Code while performing plan reviews and field inspections (SLO #3).
- Diagnose code examples with a minimum of 80% accuracy, congruent with industry certification.

BIT 130 Introduction to Inspection of Wood Frame Construction

This is a basic course designed to provide a thorough understanding of wood frame construction requirements for building plan review and inspection. The course will cover inspections for floor, roof and wall framing, and wall bracing for seismic and wind design. Simple beam calculations will be made.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- Review wood framing plans for compliance with the International Building Code (SLO #1).
- Apply inspection procedures by developing the ability to visualize various types of wood framing methods.
- Identify code violations in wood structural systems at various stages of construction.
- Define wood terms and definitions of lumber for framing and simple beams (SLO #2).
- Compare and contrast lumber grades and specifications in order to verify adequacy of framing members and perform simple beam calculations.
- Understand concepts of lateral bracing both prescriptive (conventional) and designed (SLO #3).
- Understand the concept of continuous load path, both vertical and lateral, and identify key components of a wood structural system.

BIT 140 Residential Electrical Code Requirements

This course includes review of basic electricity and electrical principles for building inspection. This course is limited to the electrical code requirements for residential structures. The course will cover the use and interpretation of the electrical requirements found in the International Residential Code, legal and administrative enforcement procedures, field inspection techniques and procedures, methods and techniques used in electrical installations and emerging technologies.

Student Learning Outcomes

Upon completion of this course, the student will be able to:

- SLO #1 Explain the organization, origin, development and purpose of the electrical requirements found in the International Residential Code.
- Describe why specific requirements are included in the electrical chapters of the International Residential Code and describe the benefits derived from inclusion of these provisions.
- Cite specific sections in the electrical chapters of the International Residential Code in order to provide accurate information to applicants, contractors, property owners and co-workers.
- SLO #2 Interpret the electrical requirements found in the International Residential Code as it applies to residential structures.
- Analyze regulations, minimum standards, new methods and materials used in the electrical industry.
- Understand electrical installations in residential structures to ensure occupant safety by effective compliance with the electrical requirements found in the International Residential Code.
- Apply inspection procedures by developing the ability to visualize various types of electrical methods and identify code violations in installed electrical systems at various stages of construction.
- SLO #3 Interpret and apply the provisions of the electrical chapters of the International Residential Code while performing plan reviews and field inspections.
- Diagnose code examples with a minimum of 80% accuracy, congruent with industry certification.

BIT 141 Commercial Electrical Code Requirements
This course is an in-depth study of the National Electrical Code (NEC) as it relates to commercial and industrial construction and includes text adopted into the California Building Standards Code (Title 24). Study will include the most critical aspects of the National Electrical Code for electrical wiring systems found in commercial and industrial installations.

### Student Learning Outcomes

Upon completion of this course, the student will be able to:

- **SLO #1** Describe the application, purpose and intent of specific requirements in the National electrical Code.
- **SLO #2** Locate specific sections in the National Electrical Code in order to provide accurate information to applicants, contractors, property owners and co-workers.
- **SLO #3** Interpret the National Electrical Code based on a thorough understanding of the code requirements in order to ensure code compliance on commercial and industrial electrical systems.
- **SLO #4** Apply inspection procedures by developing the ability to visualize various types of electrical methods and identify code violations in installed electrical systems at various stages of construction.
- **SLO #5** Interpret and apply the provisions of the National Electrical Code while performing plan reviews and field inspections of advanced electrical systems.
- **SLO #6** Diagnose code examples with a minimum of 80% accuracy, congruent with industry certification.

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### BIT 150 California Energy Code – Building Energy Efficiency Standards

This course introduces the interpretation and use of the California Energy Code, and legal and administrative enforcement procedures with emphasis on heating, ventilating, air conditioning and related installations.

### Student Learning Outcomes

Upon completion of this course, the student will be able to:

- **SLO #1** Understand plan and inspection procedures, as well as the organization of the California Energy Code
- **SLO #2** Identify the origin and organization of the California Energy Code.
- **SLO #3** Interpret California Energy Code requirements for plans, permits and inspections.
- **SLO #4** Analyze basic principles of energy calculations in the context of plan review.
- **SLO #5** Identify the relationship between the California Energy Code and green building rating systems.
- **SLO #6** Interpret the California Energy Code as it relates to envelope, lighting and mechanical systems.
- **SLO #7** Describe codes governing building envelope, lighting controls, use and alternatives, mechanical system efficiency.
- **SLO #8** Describe California Energy Code compliance procedures.
- **SLO #9** Diagnose code examples with a minimum of 80% accuracy, congruent with industry certification.

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### BIT 152 HERS I, Field Verification and Diagnostic Testing for Code Compliance

This course is an introduction to the California Home Energy Rating System (HERS) and prepares students to obtain certification as a HERS I rater. The HERS I certification allows certified individuals to verify certain energy efficiency measures of newly constructed buildings and alterations to existing buildings for compliance with the California Energy Code.

### Student Learning Outcomes

Upon completion of this course, the student will be able to:

- **SLO #1** Explain the purpose and history of the Home Energy Rating System in the State of California
- **SLO #2** Describe the legal responsibilities of the HERS rater in the enforcement of the California Energy Code.
- **SLO #3** Explain the HERS field verification and diagnostic testing process and the roles of the Designer, Energy Consultant, Enforcement Agency, Builder, HERS provider and rater, Third Party Quality Control Program and the California Energy Commission.
- **SLO #4** Analyze basic principles of energy efficiency, human comfort and heat transfer.
- **SLO #5** Demonstrate a thorough knowledge of building components and systems that affect the efficiency of residential building including building envelope, HVAC systems, water heating, lighting and appliances.
- **SLO #6** Interpret the California Energy Code as it relates to envelope, lighting and mechanical systems.
- **SLO #7** Demonstrate a thorough understanding of code required HERS field verification and diagnostic testing including test and inspection protocols and documentation requirements.
- **SLO #8** Perform all required HERS field verification and diagnostic testing to ensure compliance with the California Energy Code on Residential Alternations and Newly Constructed Homes.
- **SLO #9** Explain the specific testing and documentation requirements for residential alterations and newly constructed homes regarding HERS verification and third party quality control programs when a builder opts to utilize sample groups.

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### BIT 154 California Green Building Standards Code
The purpose of this course is to introduce students to the history, purpose, proper use and interpretation of the California Green Building Standards Code. The California Green Building Standards Code was adopted by the State of California in July of 2010 and continues to evolve with each new code cycle. These standards will be felt across all of the industry’s occupations, from architects and designers to builders and inspectors. This course fills elective requirements in the BIT degree, as well as the Green Building Certificate.

**Student Learning Outcomes**

Upon completion of this course, the student will be able to:

- SLO #1: Interpret the California Green Building Standards Code (CAL Green) and summarize the origins and evolution of California Green Building Standards in the State of California.
- Understand the organization of the California Green Building Standards Code.
- Interpret California Green Building Standards Code requirements as they relate to plan review, permit issuance and inspections.
- SLO #2: Analyze basic principles of site development, energy and water efficiency, material conservation, resource efficiency and environmental quality as they relate to the California Green Building Standards Code.
- Apply provisions of the California Green Building Standards Code.
- Describe codes governing site development, energy and water efficiency, material conservation, resource efficiency and environmental quality requirements.
- SLO #3: Identify code violations of the California Green Building Standards Code during plan review and at various stages of construction.
- Define construction terms as they relate to green building.
- Diagnose code examples with a minimum of 80% accuracy, congruent with industry certification.
- SLO #4: Understand and apply the voluntary measures found in the California Green Building Standards Code.
- Understand how the voluntary measures, also known as Tiers, can be adopted by a community as a means of achieving enhanced construction or reach levels of the code.
- Explain the process for complying with prerequisite and elective measures found in both Tier 1 and Tier 2 voluntary measures.

**BIT 295 Independent Studies in Building Inspection Technology**

**Units:** 1 - 3  
**Hours:** 54 - 162 hours LAB  
**Prerequisite:** None.  
**Catalog Date:** June 1, 2020

An independent studies project involves an individual student or small group of students in study, research, or activities beyond the scope of regularly offered courses. See the current catalog section of "Special Studies" for full details of Independent Studies.

**Student Learning Outcomes**

Upon completion of this course, the student will be able to:

- SLO #1: Actively engage in intellectual inquiry beyond that required in order to pass a course of study (College Wide Learning Outcome – Area 4).
- Discuss and outline a proposal of study (that can be accomplished within one semester term) with a supervising instructor qualified within the discipline.
- Design an independent study (to be completed individually or by collaboration of a small group) to foster special knowledge, skills, and experience that are not available in any one regularly scheduled course.
- Use information resources to gather discipline-specific information.
- SLO #2: Utilize modes of analysis and critical thinking to apply theoretical perspectives and/or concepts in the major discipline of study to significant problems and/or educational activities (College Wide Learning Outcome – Area 3).
- Analyze and apply the knowledge, skills and experience that are involved in the independent study to theoretical perspectives and/or concepts in the major discipline of study.
- Explain the importance of the major discipline of study in the broader picture of society.
- SLO #3: Communicate a complex understanding of content matter of the major discipline of study (College Wide Outcome – Area 3).
- Demonstrate competence in the skills essential to mastery of the major discipline of study that are necessary to accomplish the independent study.
- SLO #4: Identify personal goals and pursue these goals effectively (College Wide Outcome – Area 4).
- Utilize skills from the "academic tool kit" including time management, study skills, etc., to accomplish the independent study within one semester term.

**BIT 298 Work Experience in Building Inspection Technology**

**Units:** 1 - 4  
**Hours:** 60 - 300 hours LAB  
**Prerequisite:** None.  
**Enrollment Limitation:** Students must be in a paid or unpaid internship, volunteer position or job related to career goals in Building Inspection Technology.  
**General Education:** AA/AS Area II(b)  
**Catalog Date:** June 1, 2020

This course provides students with opportunities to develop marketable skills in preparation for employment in their major field of study or advancement within their career. It is designed for students interested in work experience and/or internships in associate degree level or certificate occupational programs. Course content includes understanding the application of education to the workforce; completion of required forms which document the student’s progress and hours spent at the work site; and developing workplace skills and competencies. Appropriate level learning objectives are established by the student and the employer. During the semester, the student is required to participate in a weekly orientation and 75 hours of related paid work experience, or 60 hours of unpaid work experience for one unit. An additional 75 or 60 hours of related work experience is required for each additional unit. Work Experience may be taken for a total of 16 units when there are new or expanded learning objectives. Only one Work Experience course may be taken per semester.

**Student Learning Outcomes**

Upon completion of this course, the student will be able to:

- DEMONSTRATE AN UNDERSTANDING AND APPLICATION OF PROFESSIONAL WORKPLACE BEHAVIOR IN A FIELD OF STUDY RELATED ONE’S CAREER.(SLO 1)
- Understand the effects time, stress, and organizational management have on performance.
• Demonstrate an understanding of consistently practicing ethics and confidentiality in a workplace.
• Examine the career/life planning process and relate its relevancy to the student.
• Demonstrate an understanding of basic communication tools and their appropriate use.
• Demonstrate an understanding of workplace etiquette.
• DESCRIBE THE CAREER/LIFE PLANNING PROCESS AND RELATE ITS RELEVANCY TO ONE'S CAREER (SLO 2)
• Link personal goals to long term achievement.
• Display an understanding of creating a professional first impression.
• Understand how networking is a powerful job search tool.
• Understand necessary elements of a résumé.
• Understand the importance of interview preparation.
• Identify how continual learning increases career success.
• DEMONSTRATE APPLICATION OF INDUSTRY KNOWLEDGE AND THEORETICAL CONCEPTS AS WRITTEN IN LEARNING OBJECTIVES IN PARTNERSHIP WITH THE EMPLOYER WORK SITE SUPERVISOR (SLO 3)

BIT 299 Experimental Offering in Building Inspection Technology

Units: 0.5 - 4
Prerequisite: None.
Catalog Date: June 1, 2020

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