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.

Degrees and Certificates Offered

A.S. in Building Inspection Technology
A.S. in Fire Prevention
Building Inspection Technology Certificate
Green Buildings Certificate

Dean
Bob Johnson
Department Chair
Ryan Connally
Phone
(916) 525-4323
Email
johnsor3@crc.losrios.edu

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: January 1, 2022

Degree Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
<th>COURSE TITLE</th>
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</thead>
<tbody>
<tr>
<td>BIT 100</td>
<td>Introduction to the International Building Code</td>
<td>3</td>
</tr>
<tr>
<td>BIT 101</td>
<td>Introduction to the International Residential Code</td>
<td>3</td>
</tr>
<tr>
<td>BIT 112</td>
<td>Building Inspection Principles for Disabled Access</td>
<td>3</td>
</tr>
<tr>
<td>BIT 120</td>
<td>Mechanical VPlumbing Code Requirements</td>
<td>3</td>
</tr>
<tr>
<td>BIT 121</td>
<td>Mechanical II / H.V.A.C. Code Requirements</td>
<td>3</td>
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<td>BIT 140</td>
<td>Residential Electrical Code Requirements</td>
<td>3</td>
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<tr>
<td>CMT 310</td>
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<td>3</td>
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</tbody>
</table>

A minimum of 18 units from the following:

<table>
<thead>
<tr>
<th>COURSE CODE</th>
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</thead>
<tbody>
<tr>
<td>BIT 102</td>
<td>Plan Reading and Non-Structural Plan Review (3)</td>
<td></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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</tbody>
</table>
COURSE CODE | COURSE TITLE | UNITS
---|---|---
BIT 150 | California Energy Code – Building Energy Efficiency Standards (3) | 
BIT 152 | HERS I, Field Verification and Diagnostic Testing for Code Compliance (3) | 
BIT 154 | California Green Building Standards Code (3) | 

**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:** January 1, 2022

### Degree Requirements

<table>
<thead>
<tr>
<th>COURSE CODE</th>
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<tbody>
<tr>
<td>FT 300</td>
<td>Fire Protection Organization</td>
<td>3</td>
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<tr>
<td>FT 301</td>
<td>Fire Prevention Technology</td>
<td>3</td>
</tr>
<tr>
<td>FT 302</td>
<td>Fire Protection Equipment and Systems</td>
<td>3</td>
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<tr>
<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>
</tr>
<tr>
<td>FT 498</td>
<td>Work Experience in Fire Technology</td>
<td>0.5 - 4</td>
</tr>
</tbody>
</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:** 24.5 - 28

1The 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
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: January 1, 2022

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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)
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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.
Certificate Requirements

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<tr>
<th>COURSE CODE</th>
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<tbody>
<tr>
<td>ARCH 342</td>
<td>Introduction to Green Buildings</td>
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<tr>
<td>CMT 310</td>
<td>Materials of Construction</td>
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<tr>
<td>A minimum of 12 units from the following:</td>
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<tr>
<td>ARCH 332</td>
<td>Design Awareness (3)</td>
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<tr>
<td>ARCH 334</td>
<td>Advanced Design in Three Dimensions (3)</td>
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<tr>
<td>ADT 320</td>
<td>Architectural Design Technology - Building Information Modeling (BIM) I (3)</td>
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<tr>
<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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<tr>
<td>CONST 143</td>
<td>Photovoltaic Systems (3)</td>
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<tr>
<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:

- PSLO 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.
- Compare and contrast the effect of contextual issues and evaluate their impact on energy consumption, environment and the beneficial experience of interior and exterior spaces.
- PSLO 2: Identify and articulate issues related to the choice of various building, landscape and environmental systems; ideate responsive solutions; and compare the alternatives in making effective, sustainable decisions.
- Analyze and calculate energy use to make informed, environmentally-sound and economic choices to satisfy human needs for comfort and aesthetics.
- Explain the concepts of resource conservation and waste reduction and make sustainable design choices related to materials and construction.
- Develop a comprehensive understanding of green rating systems, livable communities strategies and the ability to apply these concepts in decision-making.
- PSLO 3: Demonstrate independent learning, teamwork and continuing education habits that will help to encourage a life long pursuit of knowledge.
- To use a team work process to identify issues, analyze criteria, research and apply learned principles to synthesize solutions to specific design projects.
- To demonstrate habits of visual note making and independent research by developing a sketch and notebook to record learning.

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.

Building Inspection Technology (BIT) Courses

BIT 100 Introduction to the International Building Code

| Units: | 3 |
| Hours: | 54 hours LEC |
| Prerequisite: | None |
| Catalog Date: | January 1, 2022 |

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.

BIT 101 Introduction to the International Residential Code

| Units: | 3 |
| Hours: | 54 hours LEC |
| Prerequisite: | None |
| Catalog Date: | January 1, 2022 |

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.

BIT 102 Plan Reading and Non-Structural Plan Review

| Units: | 3 |
| Hours: | 54 hours LEC |
This course provides a thorough understanding of the plan reading and non-structural plan review process undertaken by building departments prior to plan approval.

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

- **Units:** 3
- **Hours:** 54 hours LEC
- **Prerequisite:** None.
- **Advisory:** BIT 100 and CMT 300
- **Catalog Date:** January 1, 2022

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

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

- **Units:** 3
- **Hours:** 54 hours LEC
- **Prerequisite:** None.
- **Catalog Date:** January 1, 2022

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.

**BIT 110 Engineering and Structural Principles for Building Construction**

- **Units:** 3
- **Hours:** 54 hours LEC
- **Prerequisite:** None.
- **Advisory:** BIT 100
- **Catalog Date:** January 1, 2022

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.

**BIT 112 Building Inspection Principles for Disabled Access**

- **Units:** 3
- **Hours:** 54 hours LEC
- **Prerequisite:** None.
- **Advisory:** BIT 100
- **Catalog Date:** January 1, 2022

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.

**BIT 120 Mechanical I/Plumbing Code Requirements**

- **Units:** 3
- **Hours:** 54 hours LEC
- **Prerequisite:** None.
- **Advisory:** CMT 300
- **Catalog Date:** January 1, 2022

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.

**BIT 121 Mechanical II / H.V.A.C. Code Requirements**

- **Units:** 3
- **Hours:** 54 hours LEC
- **Prerequisite:** None.
- **Advisory:** CMT 300
- **Catalog Date:** January 1, 2022

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.

**BIT 130 Introduction to Inspection of Wood Frame Construction**

- **Units:** 3
- **Hours:** 54 hours LEC
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.

**BIT 140 Residential Electrical Code Requirements**

**Units:** 3  
**Hours:** 54 hours LEC  
**Prerequisite:** None.  
**Advisory:** BIT 100  
**Catalog Date:** January 1, 2022

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.

**BIT 141 Commercial Electrical Code Requirements**

**Units:** 3  
**Hours:** 54 hours LEC  
**Prerequisite:** None.  
**Advisory:** BIT 140  
**Catalog Date:** January 1, 2022

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.

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

**Units:** 3  
**Hours:** 54 hours LEC  
**Prerequisite:** None.  
**Catalog Date:** January 1, 2022

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.

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

**Units:** 3  
**Hours:** 45 hours LEC; 27 hours LAB  
**Prerequisite:** None.  
**Advisory:** BIT 150  
**Catalog Date:** January 1, 2022

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.

**BIT 154 California Green Building Standards Code**

**Units:** 3  
**Hours:** 54 hours LEC  
**Prerequisite:** None.  
**Catalog Date:** January 1, 2022

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.

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

**Units:** 1 - 3  
**Hours:** 54 - 162 hours LAB  
**Prerequisite:** None.  
**Catalog Date:** January 1, 2022

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.

**BIT 298 Work Experience in Building Inspection Technology**
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 37.5 hours of related paid work experience, or 30 hours of unpaid work experience for 0.5 unit. An additional 37.5 or 30 hours of related work experience is required for each additional 0.5 units. Students may take up to 16 units total across all Work Experience course offerings. This course may be taken up to four times when there are new or expanded learning objectives. Only one Work Experience course may be taken per semester.

BIT 299 Experimental Offering in Building Inspection Technology

Units: 0.5 - 4
Hours: 30 - 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 III(b)
Catalog Date: January 1, 2022

This is the experimental courses description.