SBST301 - Building Science

Document Type: District Master Course Outline
Proposal Type: New Course
Requester(s): David Krull  Lauren Hadley
College: South Seattle Community College

Origination Approved: 02/27/2014 - 1:41 PM

BASIC INFORMATION

Requester(s): David Krull  Lauren Hadley
College: South Seattle Community College
Division/Dept: Professional Technical
Dean: Holly Moore

 COURSE INFORMATION

Proposed Course Number:
Prefix: SBST  Number: 301
☐ Request a new Prefix
☐ This will be a common course

Full Title: Building Science
Abbreviated Title: Building Science

Catalog Course Description:
Provides an overview of the principles of Building Science and how it is applied to the design, operation and maintenance of buildings and their systems, the interaction of those systems, and the careers that use and are impacted by these principles and their applications.

Course Length: 11 Weeks  ☐ Request an Exception

Course Prerequisite(s):
Student must be enrolled in the BAS Sustainable Building Science Technology program or have instructor Permission.

Topical Outline:
Topical Outline (Approx Hours)

1. Overview of Building Science (2)
2. Heat flow-principles, calculation and measurement (2)
3. Air pressure-principles, calculation and measurement (2)
4. Air flow measurement principles, tools, operation, and measurement (2)
5. Humidity-principles, calculation, measurement and psychometrics (2)
6. Practical application of building science principles and problems (2)
7. Resources for building science information (1)
8. Complex building science issues, examples and problems (4)
9. Preparation for identification, analysis and reporting of building science issues (1)
10. Class presentations of building science issues (4)
11. Professions related to Building Science applications and implications (2)
12. Presentations by local building science professionals and employers (4)
13. Preparation for interviewing and reporting on building science professionals (1)
14. Class presentations on interviews with building science professionals (4)

COURSE CODING
Funding Source: 1.................State
Institutional Intent: 21.................Vocational Preparatory

This Course is a requirement for the following program(s):
(No Programs Selected)

☐ My Course Proposal is a requirement for a program not on this list
Program Title/Description/Notes:
BAS Sustainable Building Science Technology program

Will this course transfer to a 4-year university?  No

Is this course designed for Limited English Proficiency?  No
Is this course designed for Academic Disadvantaged?  No
Does this course have a Workplace Training component?  Yes

CIP Code: 03.0198
EPC Code: 177

☐ Request Specific CIP Code

☐ Request Specific EPC Code

Credits:

Will this course be offered as Variable Credit?  No

List Course Contact Hours

Lecture (11 Contact Hours : 1 Credit)  33
Lab (22 Contact Hours : 1 Credit)  0
Clinical Work (33 Contact Hours : 1 Credit)  0
Other (55 Contact Hours : 1 Credit)  0

Total Contact Hours  33
Total Credits  3

COLLEGE SUPPLEMENTAL
Proposed Quarter of Implementation: Fall 2014

Class Capacity: 25

Modes of Delivery: (Check all that apply)
Class Schedule Description:
Provides an overview of the principles of Building Science and how it is applied to the design, operation and maintenance of buildings and their systems, the interaction of those systems, and the careers that use and are impacted by these principles and their applications.

Student Learning Outcomes:

Communication
Read and listen actively to learn and communicate
Speak and write effectively for academic, and career purposes

Computation
Use arithmetic and other basic mathematical operations as required by program of study
Apply quantitative skills for academic, and career purposes

Critical Thinking and Problem-Solving
Think critically in evaluating information, solving problems, and making decisions

Technology
Select and use appropriate technological tools for academic, and career tasks

Personal Responsibility
Uphold the highest standard of academic honesty and integrity
Respect the rights of others in the classroom, online and in all other school activities
Attend class regularly, complete assignments on time and effectively participate in classroom and online discussions, group work and other class-related projects and activities
Abide by appropriate safety rules in laboratories, shops and classroom

Information Literacy
Independently access, evaluate and select information from a variety of appropriate sources
Have knowledge about legal and ethical issues related to the use of information
Use information effectively and ethically for a specific purpose
Program Outcomes:
1. Systems – understand operations and systems unique to sustainable buildings.
3. Communications – utilize effective communication during interviews and presentations.
5. Technical – measure, diagnose and understand building system interactions.
6. Building science – demonstrate working knowledge of building science and relationships across disciplines.
7. Social value, ethics and need – create and maintain a professional environment based on values and ethics.

Course Outcomes / Objectives:
1. Students will gain an understanding of the principles of Building Science, including the physics of heat flow, pressure and moisture transfer and how they interact with buildings and their psychrometric systems.
2. Students will solve problems related to the interaction of Building Science principles and how those apply to design, operation and maintenance of buildings and their systems.
3. Students will learn about, research and discuss jobs that are related to or would benefit from an understanding of Building Science and learn from energy professionals how their jobs employ Building Science.

Explain the student demand for the course and potential enrollment:
Course required for BAS Sustainable Building Science Technology program. All students will be enrolling in the course as a cohort. Course to be offered one time per academic year.

Explain why this course is being created:
- Employer demand
- Student demand
- Options for place-bound students

The SBST BAS degree program will address a critical gap in the current education system that has developed as this industry has evolved over the past five to 10 years. Traditional engineering, construction and architectural studies focus on the design of new buildings, rather than the complex and sophisticated systems that enable newly designed and retrofitted buildings to function. Individuals previously trained as facility managers do not have the level of expertise or systems knowledge to support these highly technical operations. Therefore, businesses are hiring engineers and spending months and even years retraining them to work in this capacity. Frequently these individuals do not want this type of work and leave when other more suitable opportunities present themselves. Individuals who choose to pursue a degree in the field of Sustainable Building Science Technology will not only have the specialized skills they need; they will be more stable employees.
This is to certify that the above criteria have all been met and all statements are accurate to the best of my knowledge.

Faculty involved in originating this program:

David Krull  
Print Name:  
Signature:  
Date:  1/1/0001

Lauren Hadley  
Print Name:  
Signature:  
Date:  1/1/0001

Dean:

Holly Moore  
Print Name:  
Signature:  
Date:  11/25/2013

Results of SSCC Curriculum Coordinating Council Findings

Participating Faculty Response and Remarks

☐ Recommended for approval
☐ Not recommended for approval
☐ This course has not yet reached Committee Review

Chairman, Curriculum Coordinating Council:

Print Name:  
Signature:  
Date:  

Vice President for Instruction:

Gary L Oertli  
Print Name:  
Signature:  
Date:  2/27/2014