

# HOUSING, CERTIFICATE

Requirements for an undergraduate certificate may be completed at any campus location offering the specified courses for the certificate.

## Program Description

This certificate program is designed to prepare students for a career in the housing industry. Students are required to take a set of complementary courses in the technology of housing, the development process, and the design and the delivery processes for housing. The minimum number of credits required is 12, with no less than six credits at the 400-level.

## What is Housing?

This program is designed to provide undergraduate students with a means of developing some basic knowledge of housing and preparing for a career in the housing industry. Housing, from low-rise detached houses to multi-unit, multi-story apartment buildings, from motels to high-rise hotels, from student residences to rural housing, is a major and vital component of the built environment. New single-family housing represents at least 4% of the GDP, and housing and its consequences account for about 12% of the GDP. With a national housing stock in excess of 110,000,000 units, the maintenance, operation, repair - and especially the upgrading, retrofit and remodeling of the existing stock - are a very important component of the national economy. Engineers have many important roles to play in the housing business, especially with the developmental, economic and technical aspects of housing.

## You Might Like This Program If...

You are passionate about housing and pursuing a career in the housing industry. Students are typically involved with the National Association of Home Builders (NAHB) Student Chapter at Penn State and/or student competition teams like the NAHB Student Competition and U.S. Department of Energy Race to Zero competition. This certificate will also help you to increase your competitiveness for employment in the residential construction industry.

## Entrance to Certificate

For entrance into the certificate program, students must be at least 5th semester. The cumulative GPA considered for admission will be consistent with, or equivalent to, the GPA minimum of 2.00 for maintaining good academic standing. Students must earn a C grade or better in each of the four courses to continue with the certificate.

## Program Requirements

To earn an undergraduate certificate in Housing, a minimum of 12 credits is required.

Code	Title	Credits
<b>Prescribed Courses</b>		
AE 470	Residential Building Design and Construction	3
<b>Additional Courses</b>		
Students must complete an application and choose an additional three courses of the following: <sup>1</sup>		9
AE 432	Design of Masonry Structures	
AE/CE 542	Building Enclosure Science and Design	
BE 462	Design of Wood Structures	

CE 410W

RM 303

Real Estate Fundamentals

<sup>1</sup> With the approval of the Hankin Chair, one housing-related course of at least 3 credits not included in the list of recommended additional courses (e.g., demographics, urban geography, social housing, etc.) can be substituted for one of the three additional courses.

Student must be at least fifth semester standing. The cumulative GPA considered for admission will be consistent with, or equivalent to, the GPA minimum of 2.0 for maintaining good academic standing. Students must earn a C grade or better in each of the four courses to continue with the certificate.

Prerequisites Required.

## Certificate Learning Objectives

- **Building Design:** Students will be able to demonstrate knowledge of design methods for several different systems within residential buildings for safety, comfort, energy efficiency, and affordability, among other criteria.
- **Building Science and Moisture Management:** Students will be able to demonstrate a basic understanding of building science that will help them in developing more sustainable, durable, and energy efficient homes. In particular, understanding the moisture related problems helps students to better address the stated learning objective.
- **Residential Construction Industry and Management:** Students will be able to demonstrate basic knowledge of housing construction industry and its role in local and national economy as well as some residential construction management.

## Academic Advising

The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee's unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (<https://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy/>)

## University Park

**Heather Hamby**

Undergraduate Programs Assistant

218 Sackett Building

University Park, PA 16802

814-867-0470

hehce@engr.psu.edu

## Career Paths

The Pennsylvania Housing Research Center (PHRC) hosts an annual career fair for the residential construction industry. This event offers opportunities for full-time employment and summer internships.

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES WITH A CERTIFICATE IN HOUSING (<http://phrc.psu.edu/Student-Education/Career-Fair/2017-Career-Fair.aspx>)

MORE INFORMATION ABOUT OPPORTUNITIES FOR GRADUATE STUDIES (<http://www.cee.psu.edu/academics/graduate/>)

## Contact

### University Park

DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING

212 Sackett Building

University Park, PA 16802

814-863-3084

[hehce@engr.psu.edu](mailto:hehce@engr.psu.edu)

<http://www.cee.psu.edu/>