Graduate Certificate in Applied Biostatistics

CERTIFICATE CODE - CG32

The Applied Biostatistics Certificate is designed for those individuals who lack formal training in biostatistics and would like to gain skills needed to understand and apply standard statistical techniques. It is an in-person and/or online program that is available to practitioners and/or students at WVU and elsewhere.

The primary objectives of the program are to:

- Describe basic concepts of probability and statistical inference
- Demonstrate standard techniques of database management and analysis
- Compare and contrast study designs common to health research
- Recognize the primary sources of bias observed in health research
- Interpret appropriate inferences from data based on strengths and limitations of major epidemiologic study designs as well as the results of descriptive and inferential statistical analyses

Individuals who would be interested in such a Certificate include clinical and translational researchers at varying levels of their career (faculty, fellows, residents, basic scientists) as well as public health practitioners, in the state of West Virginia or beyond. Interested individuals in the program should have a desire to be more self-sufficient with their research, specifically being able to know basic study design principles, analyze their data, and interpret their results.

The entire curriculum will be available both online and in-person (live), thus being accessible to individuals from a variety of backgrounds, locations, and experiences. The program will take advantage of existing course technology where courses are taught in a synchronous fashion in which the instructor lectures in-class, and the lecture (along with associated PowerPoint slides or other files, such as SAS programs) is broadcast online. While the lecture is available live during the lecture itself, the video or audio of the lecture is archived and available on the course for access at any time. All course notes, homework, programs, etc. are available online, and the instructor is available in a number of formats (online chat, email, phone) to accommodate distance-learning students.

Applied Biostatistics Certificate Program students will typically take one class per semester. Completion of the program will typically take two years.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS 601</td>
<td>Applied Biostatistics 1</td>
<td>4</td>
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<tr>
<td>BIOS 603</td>
<td>Applied Biostatistics 2</td>
<td>3</td>
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<td>BIOS 604</td>
<td>Applied Biostatistics 3</td>
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<td>EPID 601</td>
<td>Public Health Epidemiology</td>
<td>3</td>
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<tr>
<td><strong>Total Hours</strong></td>
<td></td>
<td><strong>15</strong></td>
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Certificate Learning Outcomes

APPLIED BIOSTATISTICS

Upon completion of the certificate students should be able to:

- Describe basic concepts of probability and statistical inference
- Demonstrate standard techniques of database management and analysis
- Compare and contrast study designs common to health research
- Recognize the primary sources of bias observed in health research
- Interpret appropriate inferences from data based on strengths and limitations of major epidemiologic study designs as well as the results of descriptive and inferential statistical analyses