**BIOSTATISTICS, MASTER OF SCIENCE (M.S.) WITH A CONCENTRATION IN CLINICAL RESEARCH AND BIOSTATISTICS**

**Program goal**
The mission of the VCU Department of Biostatistics is to improve human health through methodological research, the education of graduate students and health science researchers in biostatistical methods and applications, and collaborative health sciences research. Faculty members conduct methodological research motivated by collaborative alliances, which in turn contributes to and enhances the department’s educational mission. By focusing on the integration of methodological and collaborative research, students develop strong biostatistical and communication skills, enabling them to assume leadership positions in academia, government and industry.

**Student learning outcomes**
This training program is designed to be completed in 12 months (three semesters: fall, spring, summer) and will help students achieve the following learning outcomes:

a. Explain biostatistical concepts, ideas and methods in plain terms to non-biostatistical researchers
b. Demonstrate the ability to effectively collaborate with biostatistical and health science researchers
c. Develop fluency in several computational languages
d. Display exceptional written and oral communication skills

Students in the clinical research and biostatistics concentration will achieve the following additional learning outcomes:

e. Design an observational or experimental research study in a clinical setting
f. Synthesize findings and evidence from multiple clinical research sources

**VCU Graduate Bulletin, VCU Graduate School and general academic policies and regulations for all graduate students in all graduate programs**

The VCU Graduate Bulletin website documents the official admission and academic rules and regulations that govern graduate education for all graduate programs at the university. These policies are established by the graduate faculty of the university through their elected representatives to the University Graduate Council.

It is the responsibility of all graduate students, both on- and off-campus, to be familiar with the VCU Graduate Bulletin as well as the Graduate School website and academic regulations in individual school and department publications and on program websites. However, in all cases, the official policies and procedures of the University Graduate Council, as published on the VCU Graduate Bulletin and Graduate School websites, take precedence over individual program policies and guidelines.

Visit the academic regulations section for additional information on academic regulations for graduate students.

**Degree candidacy requirements**
A graduate student admitted to a program or concentration requiring a final research project, work of art, thesis or dissertation, must qualify for continuing master’s or doctoral status according to the degree candidacy requirements of the student’s graduate program. Admission to degree candidacy, if applicable, is a formal statement by the graduate student’s faculty regarding the student's academic achievements and the student's readiness to proceed to the final research phase of the degree program.

Graduate students and program directors should refer to the following degree candidacy policy as published in the VCU Graduate Bulletin for complete information and instructions.

Visit the academic regulations section for additional information on degree candidacy requirements.

**Graduation requirements**
As graduate students approach the end of their academic programs and the final semester of matriculation, they must make formal application to graduate. No degrees will be conferred until the application to graduate has been finalized.

Graduate students and program directors should refer to the following graduation requirements as published in the Graduate Bulletin for a complete list of instructions and a graduation checklist.

Visit the academic regulations section for additional information on graduation requirements.

Apply online today. (https://www.vcu.edu/admissions/apply/graduate/)

**Admission requirements**

<table>
<thead>
<tr>
<th>Degree:</th>
<th>Semester(s) of entry:</th>
<th>Deadline dates:</th>
<th>Test requirements:</th>
</tr>
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<tbody>
<tr>
<td>M.S.</td>
<td>Fall preferred</td>
<td>Applications received prior to Jan 15</td>
<td>GRE</td>
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In addition to the general admission requirements of the VCU Graduate School (http://bulletin.vcu.edu/graduate/study/admission-graduate-study/admission-requirements/), students applying to the clinical research and biostatistics concentration must hold the M.D., D.D.S., Ph.D., D.P.H., D.O., Pharm.D. or an equivalent health professional terminal degree from an accredited college or university. Applicants with international M.D. degrees are considered on an individual basis. The applicant must have a minimum undergraduate GPA of 3.00. Applicants must also submit a letter detailing career goals and how the M.S. in Biostatistics with a concentration in clinical research and biostatistics applies to those goals, as well as at least three letters of recommendation.

**Degree requirements**
In addition to the general VCU Graduate School graduation requirements (http://bulletin.vcu.edu/academic-regps/grad/graduation-info/), M.S. students must complete a minimum total of 33 graduate credit hours.

Visit the academic regulations section for additional information on academic regulations for graduate students.
Applied examination
Students pursuing the M.S. degree must pass an applied examination administered after completion of the following courses: BIOS 524, BIOS 601, BIOS 602 and BIOS 606. This examination is graded as pass or fail. A student who does not pass the applied examination will have one opportunity to retake the examination.

Thesis
There is no thesis requirement for the M.S. program.

Course requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td>BIOS 524</td>
<td>Biostatistical Computing</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 601</td>
<td>Analysis of Biomedical Data I</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 602</td>
<td>Analysis of Biomedical Data II</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 603</td>
<td>Biostatistical Consulting (one-credit course taken two semesters)</td>
<td>2</td>
</tr>
<tr>
<td>BIOS 606</td>
<td>Clinical Trials</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 690</td>
<td>Biostatistical Research Seminar (one-credit course taken two semesters)</td>
<td>2</td>
</tr>
<tr>
<td>BIOS 697</td>
<td>Directed Research in Biostatistics</td>
<td>1</td>
</tr>
<tr>
<td>OVPR 601</td>
<td>Scientific Integrity</td>
<td>1</td>
</tr>
</tbody>
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Required concentration courses
- BIOS 531 Clinical Epidemiology 3
- BIOS 535 Behavioral Measurement 3
- BIOS 635 Structural Equation Modeling 3

Elective courses
Select six credits from these suggested electives: 6
- BIOS 543 Graduate Research Methods I
- BIOS 544 Graduate Research Methods II
- BIOS 549 Spatial Data Analysis
- BIOS 660 Sequential Analysis and Advanced Design and Analysis of Clinical Trials

Total Hours 33

The minimum number of graduate credit hours required for this degree is 33.

Contact
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Program website: biostatistics.vcu.edu (http://www.biostatistics.vcu.edu/)