

# **BMSC 8235 SYLLABUS**

## **COURSE AND CONTACT INFORMATION**

Course: BMSC 8235, Applied Biostatistics for Basic Research

Semester: Fall 2020  
Wednesday September 2nd – December 9th

Time/Location: Wednesdays: 8:30 AM – 11:00 AM  
*All lectures will be delivered online.*

## **COURSE INSTRUCTOR**

Name: Heather Gordish-Dressman

Campus Address: 801 Roeder Rd, Suite 600, Office #612, Silver Spring, MD 20910

Phone: 410 340 6135 (cell phone – accepts text messages)

E-mail: [Hgordish@childrensnational.org](mailto:Hgordish@childrensnational.org)

Office hours: by appointment (contact Dr. Gordish-Dressman)

## **REMOTE INSTRUCTION INFORMATION**

This course will be held entirely through Web-Ex meetings scheduled for Wednesdays from 8:30 to 11:00 am.

*Students are expected to join via Web-Ex for each lecture which will be given in real-time.* Lectures will be

recorded and links posted once they are available. Web-Ex can be accessed directly from this link

<https://gwu.webex.com/gwu/j.php?MTID=mee683321c85f61d3fbed0f6c494324aa>

You will need to enter the meeting password below.

Meeting number (access code): 120 564 2371

Meeting password: 6GJmhXXMg83

The meeting link and password is valid for the entire semester and should be used each week.

You will have the option to use the audio function on your computer or to call in via phone.

In order to fully view the slides presented each week, an internet accessible computer is required. Small tables and/or phones will not allow adequate viewing of the presented material.

## **COURSE DESCRIPTION**

The course objective is to provide a background in biostatistics that will teach students how to understand statistics presented in the literature, apply basic statistical methods to their own data, and to better understand the role of statistics in experimental design. This is a hybrid course. Two hour lectures will be given every other week. The alternative weeks' classes will be conducted via web where content will include discussions of literature examples that pertain to the previous weeks lecture. This time will also be available for general discussion between lecturer and students and the opportunity to discuss homework assignments.

## LEARNING OBJECTIVES

At the end of this course, students should be able to:

- **EXPLAIN/INTERPRET** statistics as presented in literature sources
- **APPLY** basic statistical concepts and methods to their own data
- **DESIGN** experiments that are well-thought out and statistically sound

## TEXT

Statistics in Plain English, Fourth Edition by Timothy C. Urdan (Jul 25, 2016)

Statistics in Plain English, Third Edition by Timothy C. Urdan is an acceptable substitute

## SCHEDULE OF CLASSES

**Fall 2020 Applied Biostatistics for Basic Research Schedule – Wednesday, 8:30 – 11:00 am**

NOTE: In accordance with university policy, the final exam will be given during the final exam period and not the last week of the semester. For details and complete policy, see: [provost.gwu.edu/administration-final-examinations-during-examination-period](http://provost.gwu.edu/administration-final-examinations-during-examination-period)

Class	Presenter	Topic/Title	Classroom
9/02/2020	Gordish-Dressman	Introduction to statistics (data types, data presentation)	Web
9/09/2020	Gordish-Dressman		Web
9/16/2020	Gordish-Dressman	P-values and probability (probability distributions, hypothesis testing and study design)	Web
9/23/2020	Gordish-Dressman		Web
9/30/2020	Gordish-Dressman	Linear regression and correlation	Web
10/7/2020	Gordish-Dressman		Web
10/14/2020	Gordish-Dressman	Analysis of categorical data and ANOVA	Web
10/21/2020	Gordish-Dressman		Web
10/28/2020	Gordish-Dressman	Power and sample size/Small samples	Web
11/04/2020	Gordish-Dressman		Web
11/11/2020	Gordish-Dressman	Special topics in clinical data analysis	Web
11/18/2020	Gordish-Dressman		Web
11/25/2020	Gordish-Dressman	NO CLASS (Thanksgiving)	Web
12/2/2020	Gordish-Dressman	Special topics in genetic data analysis	Web
12/9/2020	Gordish-Dressman	TBD (Student directed topics/ Wrap up)	Web

## ASSIGNMENTS

Date Assigned	Date Due	Topic of assignment	% of Final Grade
9/02/2020	9/09/2020	Introduction to statistics	10
9/16/2020	9/23/2020	P-values and probability	10
9/30/2020	10/07/2020	Linear regression and correlation	10
10/14/2020	10/21/2020	Analysis of categorical data and ANOVA	10
10/28/2020	11/04/2020	Power and sample size/Small samples	10
11/11/2020	11/18/2020	Clinical data analysis	10
TBD	TBD	Final exam	40

## GRADING

- Grading will be based on a final exam at course end and homework assignments. Six (6) homework assignments will contribute 60% to the final grade; the final exam will contribute 40%.
- Attendance of registered IBS graduate students to all lectures is mandatory. After the first absence, each unexcused absence will reduce the final grade by 0.25 (i.e., A to A-), such that after the 4<sup>th</sup> absence, the grade is decreased by one full letter grade (i.e. A to B).

## EXPECTED INSTRUCTION AND INDEPENDENT LEARNING

Over 15 weeks, this 2-credit online course will meet for 2 hours (120 minutes) for direct instruction per week. Students will be expected to spend a minimum of 3 hours (180 minutes) per week completing homework assignments and preparing for class. A total of 5 hours per week is expected for this course. More information about GW's credit hour policy can be found at: [provost.gwu.edu/policies-forms](http://provost.gwu.edu/policies-forms) (webpage); or [provost.gwu.edu/files/downloads/Resources/Assignment-Credit-Hours-7-2016.pdf](http://provost.gwu.edu/files/downloads/Resources/Assignment-Credit-Hours-7-2016.pdf)

## UNIVERSITY POLICIES

### University policy on observance of religious holidays

In accordance with University policy, students should notify faculty during the first week of the semester of their intention to be absent from class on their day(s) of religious observance. For details and policy, see: [students.gwu.edu/accommodations-religious-holidays](http://students.gwu.edu/accommodations-religious-holidays).

### Academic integrity code

Academic dishonesty is defined as cheating of any kind, including misrepresenting one's own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information. For details and complete code, see: [studentconduct.gwu.edu/code-academic-integrity](http://studentconduct.gwu.edu/code-academic-integrity)

### Safety and security

In the case of an emergency, if at all possible, the class should shelter in place. If the building that the class is in is affected, follow the evacuation procedures for the building. After evacuation, seek shelter at a

predetermined rendezvous location.

### **Support for students outside the classroom**

#### **Disability Support Services (DSS)**

Any student who may need an accommodation based on the potential impact of a disability should contact the Disability Support Services office at 202-994-8250 in the Rome Hall, Suite 102, to establish eligibility and to coordinate reasonable accommodations. For additional information see: [disabilitysupport.gwu.edu/](http://disabilitysupport.gwu.edu/)

#### **Mental Health Services 202-994-5300**

The University's Mental Health Services offers 24/7 assistance and referral to address students' personal, social, career, and study skills problems. Services for students include: crisis and emergency mental health consultations confidential assessment, counseling services (individual and small group), and referrals. For additional information see: [counselingcenter.gwu.edu/](http://counselingcenter.gwu.edu/)