

The George Washington University
Department of Statistics
STAT 6245-10
Spring, 2024

Course and contact information

Course: STAT 6245, Statistical Consulting
Meeting time: Thursday, 12:45-3:00pm
Location: TBD

Instructor

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Office hours: Thursday, 3:30pm-5:00pm
TA: TAB

Textbook: No Required Text book. Some references will be available.

*Reference book: Statistical Consulting, by Javier Cabrera and Andrew McDougall, 2010.
Publisher: Springer*

Course description:

In this course we focus on the following themes: (i) understanding the statistical consulting "process"; (ii) developing effective verbal and written communication skills; (iii) discussing different consulting environments (in different industries); and (iv) obtaining consulting experience through case studies. Statistical consulting occurs in a very diverse range of environments and for tackling real-life problems. To be a good applied statistician, one needs to have a strong interest in the scientific method of the corresponding applied area. The course targets to have about 5 real consulting projects, and have each student involve in at least one real project.

Course prerequisites

The course is designed for MS students and PhD students who have completed STAT 6201 (Mathematical Statistics I) and STAT 6214 (Applied Linear Models).

Learning outcomes

As a result of completing this course, students will be able to

- 1. Understand the statistical consulting "process";*
- 2. Enhance their oral and written communication skills;*
- 3. Develop skills in collaboration and teamwork;*
- 4. Understand the diverse range of consulting environments, learn how to tackle real-life problems using appropriate statistical methods, and interpret their results in meaningful ways.*
- 5. Improve their presentation skill.*

Topics by weeks

1. Week 1 and 2: Discussion of some basic statistical consulting skills: communication skill; scientific skill, statistical skill and computational skill.
2. Week 3 and 4: Discussion of verbal and written communication skills.
3. Week 5 and 6: Case study 1 and 2. Presentation 1 of each student.
4. Week 7 and 8: Case study 3 and 4. Presentation 2 of each student.
5. Week 9 and 10: Real world projects and discussion. Group presentations.
6. Week 11 and 12: Real world projects and discussion. Group presentations.
7. Week 13: Some further research and practical problems.
8. Week 14 and 15: Presentation of the final projects.

Credit hour policy:

This is a 3-credit course. This would include 2.5 hours of direct instruction and a minimum of 5 hours of independent learning per week for a combined minimum total of 7.5 hours per week or 112.5 hours per semester. See [Assignment of Credit Hour Policy](#) for more information.

Assignments:

There will be about 5 bi-weekly homework assignments. Each assignment will be worth 100 points. The assignments will be on:

- (i) Standard homework with around 2 problems
- (ii) some small projects on Statistical Consulting
- (iii) Analysis of some real-world data

Grading

The course grade will be based on

- Homework Assignments (15%)
- One Midterm project (15%)
- Classroom participation (20%)
- Final project and presentation (50%).

Class Attendance

It is important that you attend the class. Everyone should attend the class. If you cannot attend, please let me know the reason. You are responsible for any materials covered or any announcements made in class.

University policies

Academic Integrity Code: Academic integrity is an essential part of the educational process, and all members of the GW community take these matters very seriously. As the instructor of record for this course, my role is to provide clear expectations and uphold them in all assessments. Violations of academic integrity occur when students fail to cite research sources properly, engage in unauthorized collaboration, falsify data, and otherwise violate the Code of Academic Integrity. If you have any questions about whether particular academic practices or

resources are permitted, you should ask me for clarification. If you are reported for an academic integrity violation, you should contact the Office of Student Rights and Responsibilities (SRR) to learn more about your rights and options in the process. Consequences can range from failure of assignment to expulsion from the university and may include a transcript notation. For more information, please refer to the SRR website (<https://studentconduct.gwu.edu/academic-integrity>), email rights@gwu.edu, or call 202-994-6757.

University policy on observance of religious holidays

Students must notify faculty during the first week of the semester in which they are enrolled in the course, or as early as possible, but no later than three weeks prior to the absence, of their intention to be absent from class on their day(s) of religious observance. If the holiday falls within the first three weeks of class, the student must inform faculty in the first week of the semester. For details and policy, see “Religious Holidays” at provost.gwu.edu/policies-procedures-and-guidelines.

Use of Electronic Course Materials and Class Recordings

Students are encouraged to use electronic course materials, including recorded class sessions, for private

personal use in connection with their academic program of study. Electronic course materials and recorded class sessions should not be shared or used for non-course related purposes unless express permission has been granted by the instructor. Students who impermissibly share any electronic course materials are subject to discipline under the Student Code of Conduct. Please contact the instructor if you have questions regarding what constitutes permissible or impermissible use of electronic course materials and/or recorded class sessions. Please contact Disability Support Services at disabilitysupport.gwu.edu if you have questions or need assistance in accessing electronic course materials.

Academic support

Writing Center

GW’s Writing Center cultivates confident writers in the University community by facilitating collaborative,

critical, and inclusive conversations at all stages of the writing process. Working alongside peer mentors, writers develop strategies to write independently in academic and public settings. Appointments can be booked online at gwu.mywconline.com

Academic Planning and Assessment

Academic Commons

Academic Commons provides tutoring and other academic support resources to students in many courses. Students can schedule virtual one-on-one appointments or attend virtual drop-in sessions. Students may schedule an appointment, review the tutoring schedule, access other academic support resources, or obtain assistance at academiccommons.gwu.edu

Support for students outside the classroom

Disability Support Services (DSS) 202-994-8250

Any student who may need an accommodation based on the potential impact of a disability should contact Disability Support Services at disabilitysupport.gwu.edu to establish eligibility and to coordinate reasonable accommodations.

Counseling and Psychological Services 202-994-5300

GW's Colonial Health Center offers counseling and psychological services, supporting mental health and personal development by collaborating directly with students to overcome challenges and difficulties that may interfere with academic, emotional, and personal success. healthcenter.gwu.edu/counseling-and-psychological-services.

Safety and Security

Monitor GW Alerts and Campus Advisories to Stay Informed before and during an emergency event or

Situation. In an emergency: call GYPD/EMERG 202-994-6111 or 911. For situation-specific actions: refer to GWU's Emergency Response Handbook and Emergency Operations Plan. In the event of an armed intruder: Run. Hide. Fight.