

SYLLABUS

STATISTICAL LEARNING WITH BIG DATA

STAT 6115/DSBA 6115, Fall 2025

Instructor

Name	Dr. Yinghao Pan	Email : ypan8@charlotte.edu
Office Hours	Tue. 3:00 pm – 5:00 pm, Fretwell 340G, or by appointment	

Course Information

Meeting	Tue 5:30 pm - 8:15 pm, Aug. 18, 2025 - Dec. 10, 2025.
Website	CANVAS.
Time zone	All announcements including date/time are based on the eastern time.
Textbook	<p>Required</p> <p><i>An Introduction to Statistical Learning with Applications in R, 2nd Edition</i>, by Gareth James, Daniela Witten, Trevor Hastie, and Robert Tibshirani (Link).</p> <p>Recommended</p> <p><i>The Elements of Statistical Learning</i>, by Trevor Hastie, Robert Tibshirani, and Jerome Friedman</p>
Prerequisite	STAT 5110 or STAT 5123
Description	<p>This course introduces a variety of statistical learning methods that are widely applicable across both academic and professional domains. By presenting the fundamental concepts of statistical learning, it aims to help students understand the theoretical foundations of data mining techniques. Topics covered include statistical learning principles, classical linear methods for regression and classification, cross-validation, bootstrap methods, modern linear techniques, non-linear approaches, tree-based models, support vector machines, and unsupervised learning.</p>
Software to use	R. See the Software section for details.

Evaluation

Attendance	5%
Homework	30%
Midterm Exam	30%
Final Exam	35%

Grading

A	90.00 % –
B	80.00 % – 89.99 %
C	70.00 % – 79.99 %
U	– 69.99 %

Required Work

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| Attendance | <ul style="list-style-type: none"> • Attendance is highly important, as your success in this course depends heavily on your active participation and engagement in class discussions. I will take attendance periodically. • You are allowed one (1) unexcused, unexplained absence. If you feel sick or have other emergency, please email me before class. If I approve your request, the absence will not be counted. Be sure to monitor your attendance record in Canvas and keep track of your absences. |
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| Homework | <ul style="list-style-type: none"> • There will be homework assignments for each chapter. • Homework problem list will be announced at least a week before the due dates and it will be posted on CANVAS. • No late homework will be accepted unless you are told to do. • You are allowed to drop the lowest homework score. |
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| Exams | <ul style="list-style-type: none"> • If a student has a documented emergency and has to miss the mid-term, he (she) must email me before the test date. And the missed midterm grade will be replaced by the student's final exam grade. All students must take the final exam to pass this course; otherwise, your grade will be a U, regardless of your grade without the final exam grade. • Midterm: Oct 7, 2025 • Final: TBA |

Statistical Software R

R is a free statistical software and very strong in statistical analysis. In this course, we mainly use R for computation. It is a script-based language and easy to learn on your own. **Any other languages will not be accepted for all the assignments and exams.**

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| R Introduction | R Introduction by R Core Team |
| R Practice | Data Camp Introduction to R |

Course Policies

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| Syllabus | The standards and requirements set forth in this syllabus may be modified at any time by the course instructor. Notice of such changes will be sent by CANVAS notice. |
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Academic Integrity

All students are required to read and abide by the Code of Student Academic Integrity. Violations of the Code of Student Academic Integrity, including plagiarism, will result in disciplinary action as provided in the Code. Definitions and examples of plagiarism are set forth in the Code. The Code is available from the Dean of Students Office or [online](#).

Non-Discrimination

All students and the instructor are expected to engage with each other respectfully. Unwelcome conduct directed toward another person based upon that person's actual or perceived race, actual or perceived gender, color, religion, age, national origin, ethnicity, disability, or veteran status, or for any other reason, may constitute a violation of University Policy 406, The Code of Student Responsibility. Any student suspected of engaging in such conduct will be referred to the Office of Student Conduct.

Title IX

Title IX UNC Charlotte is committed to providing an environment free of all forms of discrimination and sexual harassment, including sexual assault, domestic violence, dating violence, and stalking. If you (or someone you know) has experienced or experiences any of these incidents, know that you are not alone. UNC Charlotte has staff members trained to support you in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more. Please be aware that many UNC Charlotte employees, including all faculty members, are considered Responsible Employees who are required to relay any information or reports of sexual misconduct they receive to the Title IX Coordinator. This means that if you tell me about a situation involving sexual harassment, sexual assault, dating violence, domestic violence, or stalking, I must report the information to the Title IX Coordinator. Although I have to report the situation, you will still have options about how your case will be handled, including whether or not you wish to pursue a formal complaint. Our goal is to make sure you are aware of the range of options available to you and have access to the resources you need. If you wish to speak to someone confidentially, you can contact any of the following on-campus resources, who are not required to report the incident to the Title IX Coordinator: (1) University Counseling Center (counselingcenter.uncc.edu, 7-0311); (2) Student Health Center (studenthealth.uncc.edu, 7-7400); or (3) Center for Wellness Promotion (wellness.uncc.edu, 7-7407). Additional information about your options is also available at titleix.uncc.edu under the Students tab.

Disability Service

Students in this course seeking accommodations to disabilities must first consult with the Office of Disability Services and follow the instructions of that office for obtaining accommodations. The Office of Disability Services works with current undergraduate and graduate students along with prospective students to ensure equal access to UNC Charlotte's campus and educational programs.

All services are dependent upon verification of eligibility. Once approved for services, students receive accommodations which are based upon the nature of an individual's disability and documented needs. Students are strongly encouraged to register or check-in for their accommodations with a Disability Services counselor as soon as they have registered for classes. Accommodations are not retro-active and will not begin until the student notifies his or her faculty by providing the Letter of Accommodation. Please visit the Office of Disability Services at for additional resources, email questions to disability@uncc.edu, or call 704-687-0040 for more information.