

## Wayland Mission Statement

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Wayland Baptist University exists to educate students in an academically challenging, learning-focused, and distinctively Christian environment for professional success, and service to God and humankind.

## Contact Information

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**Course:** BUDS 5301 VC01 – R Programming Language

**Campus:** WBUonline

**Term/Session:** Fall 1st8wks 2026

**Instructor:** Dr. Rick Hammer

**Office Phone Number/Cell # NA**

**WBU Email Address:** hammerr@wbu.edu

**Office Hours, Building, and Location:** Online as needed

**Class Meeting Time and Location:** Asynchronous online

**Catalog Description:**

Creates applications using variables, constants, selection structure, and repetition structure with R. Applies R for data mining.

**Prerequisite:** None

## Textbook Information

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**Required Textbook(s) and/or Required Materials:**

BOOK	AUTHOR	ED	YEAR	PUBLISHER	ISBN#
<u>Data Science Foundations with R</u>	Schwab-McCoy, Chan, Rissler		2026	Zybooks	9798-20323-1291

*This course is part of the **Pioneer Academic Access Program**. You will have access to an eBook, access code, and interactive learning material on the first day of class through your Blackboard course site. You will be notified via email with access instructions and additional information. If the course requires a physical book you can order at bookstore.wbu.edu. You can choose to opt-out, however if you do you will lose access to **EVERY class/material** and have to source through third party vendors.*

**Optional Materials:** <<List optional materials recommended to enhance student learning>>

### Course Outcome Competencies:

- Create applications using variables, constants, selection structure, and repetition structure with R.
- Examine model performance using R
- Perform simple and advanced statistical analysis using R
- Apply data mining using R

## Attendance Requirements

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### WBUonline

Students are expected to participate in all required instructional activities in their courses. Online courses are no different in this regard; however, participation must be defined in a different manner. Student “attendance” in an online course is defined as active participation in the course as described in the course syllabus. Instructors in online courses are responsible for providing students with clear instructions for how they are required to participate in the course. Additionally, instructors are responsible for incorporating specific instructional activities within their course and will, at a minimum, have weekly mechanisms for documenting student participation. These mechanisms may include, but are not limited to, participating in a weekly discussion board, submitting/completing assignments in Blackboard, or communicating with the instructor. Students aware of necessary absences must inform the professor with as much advance notice as possible in order to make appropriate arrangements. Any student absent 25 percent or more of the online course, i.e., non-participatory during 2 or more weeks of an 8-week session, may receive an F for that course. Instructors may also file a Report of Unsatisfactory Progress for students with excessive non-participation. Any student who has not actively participated in an online class prior to the census date for any given session is considered a “no-show” and will be administratively withdrawn from the class without record. To be counted as actively participating, it is not sufficient to log in and view the course. The student must be submitting work as described in the course syllabus. Additional attendance and participation policies for each course, as defined by the instructor in the course syllabus, are considered a part of the university’s attendance policy.

## University Policies

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### Academic Integrity:

[Link to Statement on Academic Integrity](#)

**Artificial Intelligence:** reference one of the following in regard to how generative artificial intelligence (GAI) such as ChatGPT may or may not be used in this course: Choose A, B or C and delete the others.

- A. Generative AI tools permitted in specific context and with proper citations.**
  - i. Students are allowed to use, reference, or incorporate generative AI tools into specific assignments for this course. When used, students must properly cite the generative AI tool in their submitted work.
  - ii. While there is no true substitute for direct help and instruction for your instructor, students may be allowed to use generative AI tools to provide further explanations of course content, readings, and other assignments. Any use of generative AI tools to help further explain or translate content must be properly referenced and cited.
  - iii. Specific parameters for generative AI usage are provided by the instructor.

- iv. Any use of generative AI tools outside of the approved instructor parameters will be considered a form of plagiarism and academic dishonesty.

**Disability Statement:** In compliance with the Americans with Disabilities Act of 1990 (ADA), it is the policy of Wayland Baptist University that no otherwise qualified person with a disability be excluded from participation in, be denied the benefits of, or be subject to discrimination under any educational program or activity in the university. The Disability Services Coordinator and Academic Coach serves as the coordinator of students with disabilities and must be contacted concerning accommodation requests. Office: (806) 291-1057. Documentation of a disability must accompany any request for accommodations.

## Course Requirements and Grading Criteria

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Grade Component	Weight Percentage
Exams (2)	40 %
Assignments: Participation and Challenge activities	25 %
Zylabs	20 %
Annotated Bibliographies	15 %
<b>Total</b>	<b>100 %</b>

**Student Grade Appeals:** Students shall have protection through orderly procedures against prejudices or capricious academic evaluation. A student who believes that he or she has not been held to realistic academic standards, just evaluation procedures, or appropriate grading, may appeal the final grade given in the course by using the student grade appeal process described in the Academic Catalog. Appeals may not be made for advanced placement examinations or course bypass examinations. Appeals are limited to the final course grade, which may be upheld, raised, or lowered at any stage of the appeal process. Any recommendation to lower a course grade must be submitted through the Vice President of Academic Affairs to the Faculty Assembly Grade Appeals Committee for review and approval. The Faculty Assembly Grade Appeals Committee may instruct that the course grade be upheld, raised, or lowered to a more proper evaluation.

## Tentative Schedule

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### BUDS5301 Data Science Foundations with R

Week	Assignments
Week 1 Aug 10	Intro to R Programming Language Instructor's Introduction Required First Assignment Orientation Quiz Chapter 1: Introduction to Data Science
Week 2 Aug 17	Chapter 2: R for Data Science Participation, Challenge activities, Discussion, Zylab Annotated Bibliography: R programming language applications in corporate and non-profit enterprises

Week 3 Aug 24	Chapter 3: Probability and Statistics Participation, Challenge activities, Discussion, Zylab Annotated Bibliography: Corporate and non-profit examples of how probability and statistics are used in the organization
Week 4 Aug 31	Chapter 4: SQL for Data Science Participation, Challenge activities, ZyLab Annotated Bibliography: Corporate and non-profit examples of how SQL is used in the organization Midterm Exam
Week 5 Sep 7	Chapter 5: Data Wrangling Chapter 6: Data Visualization Participation, Challenge activities, Discussion, Zylab Annotated Bibliography: Corporate and non-profit examples of how R programming language is used to prepare data for analysis (wrangling) and how the organization uses R to prepare data visualizations
Week 6 Sep 14	Chapter 7: Regression Participation, Challenge activities, Discussion, Zylab Annotated Bibliography: Corporate and non-profit examples of how regression analysis is used in the organization
Week 7 Sep 21	Ch 12: Introduction to Neural Networks Participation, Challenge activities, Discussion, Zylab Annotated Bibliography: Corporate and non-profit examples of how neural networks are used in the organization
Week 8 Sep 28	Ch. 14: Artificial Intelligence Participation, Challenge activities Final Exam

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