



Basic Info:

- Mon/Wed (19839) or Tu/Thurs (19746) 2-3:15pm
- Briggs 119
- Course Webpage: http://cs.rhodes.edu/welshc/COMP345_F18/
- Prerequisites: COMP 241 or permission of the instructor

Instructor:

- Catie Welsh
 - Office: Briggs 208
 - Email: welshc@rhodes.edu (please include “COMP 345” in the subject)
 - Office Hours: MTR 3:30-5pm or by appointment

Textbook:

- (Required) J. Han, M. Kamber, and J. Pei, Data Mining: Concepts and Techniques. Morgan Kaufmann, 3rd edition.
- (optional) Jure Leskovec, Anand Rajaraman, Jeff Ullman. Mining of Massive Datasets, 2nd edition. Available online at www.mmds.org

Course Description: Data mining, or intelligent analysis of information stored in data sets, has recently gained a substantial interest among practitioners in a variety of fields and industries. This course will introduce the process of knowledge discovery and the basic theory of automatically extracting models from data, validating those models, solving the problems of how to extract valid, useful, and previously unknown interesting patterns from a source (database or web) which contains an overwhelming amount of information. Students will be introduced to various models (decision trees, association rules, clustering, Bayesian networks) and learn how to apply them in practice. Students will learn how to implement several relevant algorithms and use existing tools to mine real-world data.

Course Objectives:

- Provide students with an overview of the methodologies and approaches to data mining
- Gain insight into the challenges and limitations of different data mining techniques
- Provide the students with practice on applying data mining solutions using a common data mining software tool.
- Prepare students for research in the area of data mining and related applications.
- Enhance student communication and problem solving skills.

Workload: It is important to stay current with the material. You should be prepared to devote regular weekly hours to this course. In particular, much of the out of class workload will be reading/watching lectures to prepare you for the in-class exercises. These must be completed on-time to allow for successful participation during classrooms discussions and exercises.

Assignments:

- There will be a number of in-class exercises to be completed as groups, as well as 6-8 take-home assignments to be completed throughout the semester.
- To verify that assigned readings and video lectures are being completed, online quizzes may be given throughout the semester.

- Each student will be responsible for reading and presenting a research paper in the area of data mining. Papers will be supplied and more details will be given in class.
- A final group data mining project will be required. More details to come.

Exams:

- There will be one midterm and one final exam:
 - Midterm: Wed, October 3rd/Thurs, October 4th (in class)
 - Final Exam: Friday, Dec. 7, 5:30 p.m (Tues/Thurs Class)
Monday, Dec. 10, 5:30 p.m. (Mon/Wed Class)

Grade Breakdown:

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| • 10% In-Class Exercises, Online quizzes | • 25% Final Project |
| • 20% Assignments | • 15% Midterm |
| • 10% Paper Presentation | • 20% Final |

Grade Assignments:

- Grading is based on the below scale:

○ A : [93%, 100%]	○ C: [73%, 77%)
○ A-: [90%, 93%)	○ C-: [70%, 73%)
○ B+: [87%, 90%)	○ D+: [67%, 70%)
○ B: [83%, 87%)	○ D: [63%, 77%)
○ B-: [80%, 83%)	○ D-: [60%, 63%)
○ C+: [77%, 80%)	○ F: [0%, 60%)
- For borderline cases, I may take into account participation, and/or attendance, and improvement during the semester.

Attendance: Attendance is expected for each class as material that is not covered in the book may appear in class. If your attendance deteriorates, you will be referred to the dean and asked to drop the course. Attendance and participation may also be considered when assigning a final grade.

Scholastic Behavior: Plagiarism, cheating, and similar anti-intellectual behavior are serious violations of academic ethics and will be correspondingly penalized. If you are concerned about a possible violation of this kind, please talk with me. I understand the pressure that students may experience while at Rhodes, and I will try to help as best as I can.

Make-up Exams and Extensions on Assignments

Extensions on the due dates of assignments and individual re-scheduling of exams will be granted only for the following reasons:

- Serious and verifiable illness or medical emergency
- Participation in an official Rhodes College activity (e.g., course field trip, sports team travel)
- Religious holidays
- Major life event (such as birth, wedding, death) – your own or a close family member
- Other genuine emergency that is beyond your control

Notice that this is an extensive list. It does not, however, include situations in which the timing of an exam or assignment is simply inconvenient for you. In particular, there will be no accommodation for ordinary travel arrangements before or after college breaks.

If you wish to request an extension or re-scheduling because of a situation which can be known ahead of time, it is your responsibility to make arrangements in advance. Permission might not be given after the fact. You may be asked to make your request in writing.

In all cases, your instructor is the final judge of whether an accommodation is warranted.

Access and Accommodations: Your experience in this class is important to me. If you anticipate or experience physical or academic barriers based on disability, please let me know immediately so we can discuss options. If you have already established accommodations with Student Accessibility Services (SAS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course. If you have not yet established services through SAS, but have a condition that requires accommodations (conditions include but not limited to mental health, attention-related, learning, vision, hearing, physical or chronic health), please contact SAS at 901-843-3885, Burrow Hall 4th floor, www.rhodes.edu/accessibility. SAS offers resources and coordinates reasonable accommodations for students with disabilities and temporary conditions. Reasonable accommodations are established through an interactive process between you, SAS, and your faculty. It is the policy and practice of Rhodes College to create inclusive, equitable, and accessible learning environments for all students.

Diversity: A diverse learning community is a necessary element of a liberal arts education, for self-understanding is dependent upon the understanding of others. We are committed to fostering a community in which diversity is valued and welcomed. To that end any discrimination or harassment on the basis of race, gender, color, age, religion, disability, sexual orientation, gender identity or expression, genetic information, and national or ethnic origin, will not be tolerated in the classroom.

We are committed to providing an open learning environment. Freedom of thought, a civil exchange of ideas, and an appreciation of diverse perspectives are fundamental characteristics of a community that is committed to critical inquiry. To promote such an academic and social environment we expect integrity and honesty in our relationships with each other and openness to learning about and experiencing cultural diversity. We believe that these qualities are crucial to fostering social and intellectual maturity and personal growth.

Intellectual maturity also requires individual struggle with unfamiliar ideas. We recognize that our views and convictions will be challenged, and we expect this challenge to take place in a climate of open-mindedness and mutual respect.

Sexual Misconduct Disclosure: I will do my best to help any student who comes to me with non-course-related concerns. Please keep in mind, however, that all faculty members are mandated to report any incidents of sexual misconduct that comes to their attention. That means that I cannot keep information about sexual misconduct confidential from the college if you share that information with me, but the college has specific confidentiality and anti-retaliation protections in place.

The Rhodes Counseling Center or the Student Health Services Staff can advise you confidentially. Also, the Title IX Coordinator can help you access other resources on campus and in the local community.

The student policy is in the Student Handbook and it can be found on the web site at <https://express.rhodes.edu/title9>.

I reserve the right to alter this syllabus as necessary.