

**Department of Computer & Electrical Engineering  
and Computer Science  
Florida Atlantic University  
Course Syllabus**

<b>1. Course title/number, number of credit hours</b>	
Introduction to Data Mining and Machine Learning CAP4770	3 credit hours
<b>2. Course prerequisites, corequisites, and where the course fits in the program of study</b>	
Prerequisites: COP 3530 and (STA4821 or STA2023 or equivalent)	
<b>3. Course logistics</b>	
Term: Fall 2020 Class location and time: TBA	
<b>4. Instructor contact information</b>	
<i>Instructor's name</i>	Dr.Taghi M Khoshgoftaar., Professor
<i>Office address</i>	Engineering East Bldg., Room 511
<i>Office Hours</i>	TBA
<i>Contact telephone number</i>	561-297-3994
<i>Email address</i>	khoshgof@fau.edu
<b>5. TA contact information</b>	
<i>TA's name</i>	TBA
<i>Office address</i>	
<i>Office Hours</i>	
<i>Contact telephone number</i>	
<i>Email address</i>	
<b>6. Course description</b>	
This course deals with the principles of data mining. Topics include machine learning methods, knowledge discovery and representation, classification and prediction models.	
<b>7. Course objectives/student learning outcomes/program outcomes</b>	
<i>Course objectives</i>	To enable students to understand basic concept of data mining and machine learning algorithms with an emphasis on real world applications.
<i>Student learning outcomes &amp; relationship to ABET 1-7 outcomes</i>	BSCS program outcomes Proficiency in the areas of Artificial Intelligence, data mining and machine learning.
<b>8. Course evaluation method</b>	
Homework assignments worth 65% total Exam 35%	
<b>9. Course grading scale</b>	
Grading Scale: 90 and above: "A", above 85 but below 90: "B+", 80-85: "B", above 75 but below 80: "C+", 70-75: "C", above 65 but below 70: "D+", 60-65: "D", above 55 but below 60: D-, 55 and below: "F."	

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<b>10. Policy on makeup tests, late work, and incompletes</b>
<p>Assignments are to be submitted on time, with possible point penalties for late submissions. In no case will an assignment be accepted after the graded papers for that assignment have been returned to the students. However, appropriate accommodations will be made for students having a valid medical excuse for being unable to work on an assignment during its two week period.</p> <p>Unless there is solid evidence of medical or otherwise serious emergency situation incomplete grades will not be given.</p>
<b>11. Special course requirements</b>
NA
<b>12. Classroom etiquette policy</b>
University policy requires that in order to enhance and maintain a productive atmosphere for education, personal communication devices, such as cellular phones, are to be disabled in class sessions, and laptops are only to be used for note taking and related activities.
<b>13. Attendance policy statement</b>
<p>Students are expected to attend all of their scheduled University classes and to satisfy all academic objectives as outlined by the instructor. The effect of absences upon grades is determined by the instructor, and the University reserves the right to deal at any time with individual cases of non-attendance.</p> <p>Students are responsible for arranging to make up work missed because of legitimate class absence, such as illness, family emergencies, military obligation, court-imposed legal obligations or participation in University-approved activities. Examples of University-approved reasons for absences include participating on an athletic or scholastic team, musical and theatrical performances and debate activities. It is the student's responsibility to give the instructor notice prior to any anticipated absences and within a reasonable amount of time after an unanticipated absence, ordinarily by the next scheduled class meeting. Instructors must allow each student who is absent for a University-approved reason the opportunity to make up work missed without any reduction in the student's final course grade as a direct result of such absence.</p>
<b>14. Disability policy statement</b>
In compliance with the Americans with Disabilities Act Amendments Act (ADAAA), students who require reasonable accommodations due to a disability to properly execute coursework must register with Student Accessibility Services (SAS) and follow all SAS procedures. SAS has offices across three of FAU's campuses – Boca Raton, Davie and Jupiter – however disability services are available for students on all campuses. For more information, please visit the SAS website at <a href="http://www.fau.edu/sas/">www.fau.edu/sas/</a> .
<b>15. Counseling and Psychological Services (CAPS) Center</b>
Life as a university student can be challenging physically, mentally and emotionally. Students who find stress negatively affecting their ability to achieve academic or personal goals may wish to consider utilizing FAU's Counseling and Psychological Services (CAPS) Center. CAPS provides FAU students a range of services – individual counseling, support meetings, and psychiatric services, to name a few – offered to help improve and maintain emotional well-being. For more information, go to <a href="http://www.fau.edu/counseling/">http://www.fau.edu/counseling/</a>
<b>16. Code of Academic Integrity policy statement</b>

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Students at Florida Atlantic University are expected to maintain the highest ethical standards. Academic dishonesty is considered a serious breach of these ethical standards, because it interferes with the university mission to provide a high quality education in which no student enjoys an unfair advantage over any other. Academic dishonesty is also destructive of the university community, which is grounded in a system of mutual trust and places high value on personal integrity and individual responsibility. Harsh penalties are associated with academic dishonesty. For more information, see [University Regulation 4.001](#). If your college has particular policies relating to cheating and plagiarism, state so here or provide a link to the full policy—but be sure the college policy does not conflict with the University Regulation.

**17. Required texts/reading**

To reduce costs for our students, we strongly encourage you to explore the adoption of open educational resources (OER), textbooks and other materials that are freely accessible. We also encourage you to clearly state in the syllabus if course materials are available on reserve in the Library.

- (1) Data Mining: Practical Machine Learning Tools and Techniques, by I.H. Witten and E. Frank
- (2) Selected articles and papers are posted on the course we site.

**18. Supplementary/recommended readings**

NA

**19. Course topical outline, including dates for exams/quizzes, papers, completion of reading**

Topics:

1. What's all about?
2. Input: Concepts, instances, attributes
3. Output: Knowledge representation
4. Algorithms: The basic methods
5. Divide and conquer: Constructing decision trees
6. Credibility: Evaluating what's been learned
7. Implementations: Real machine learning schemes
8. Transformations: Engineering the input and output
9. Moving on: Engineering the input and output
- 10: Nuts and bolts: Machine learning algorithms in JAVA