# UNIVERSITY OF NEW ORLEANS
# ENEE 4583/5583 – DEEP LEARNING

INSTRUCTOR

Dr. AbdulRahman Alsamman
Office: EN 842, Phone: 280-7161
Email: a.alsamman@uno.edu

OFFICE HOURS

TBA

ZOOM

https://uno.zoom.us/j/6758927200
No password needed
All classes will be broadcast live (unless otherwise stated).
All classes will be recorded and uploaded to moodle.
Passcode on all recorded videos: q~123456

CATALOG INFO

**ENEE 4583/5583 Deep Learning, 3 cr. Hr.**
Prerequisite: Consent of department.
Introduction to the design of neural networks with deep architectures for advanced machine learning applications. Topics include: dense NN, convolutional NN, recurrent NN, belief nets, autoencoders.

T/TH 9:30AM EN309

TEXTBOOKS

***Deep Learning***, I Goodfellow, Y Bengio, A Courville, The MIT Press, ISBN: 0262035618 / 978-0262035613.
http://www.deeplearningbook.org/

TOPICS

| *Topic* | *Week* |
|---|---|
| Introduction | 1 |
| Machine Leaning Basics | 2 |
| Multi-Layer Perceptron | 3 |
| Backpropagation | 4 |
| Regularization and Generalization | 6 |
| Learning and Optimization | 7 |
| Convolutional Neural Nets (CNN and covnet) | 8 |
| Recurrent Neural Nets (RNN) | 9 |
| Variational Auto encoders (VAE) | 10 |
| Generative Adversarial Nets (GAN) | 11 |
| Boltzmann Machines | 12 |

QUIZZES

Multiple choice/answer quizzes. These will be open to book&notes and designed to test your understanding of the concepts and theory. No written tests or Final.

ASSIGNMENTS & PROJECTS

Assignments require students to reproduce some of the results shown in the text. Projects will require more analytical thinking. Unless otherwise stated these will be individual work. Students are also expected to complete a final project.

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| GRADUATE CREDIT | Graduate students will be required to cover additional topics, do more quizzes, and additional project assignments. |

GRADING POLICY

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|---|---|
| Quizzes | 20% |
| Assignments & Projects | 60% |
| Final Project | 20% |
| TOTAL | 100% |

GRADE ASSIGNMENT Letter grades will be assigned according to the guidelines: A:90-100, B:80-89, C:70-79, D:60-69, F: < 60.

IMPORTANT DATES http://registrar.uno.edu/bulletin/importantdates/

ATTENDANCE Class attendance is required and encouraged. Student may attend in person or via zoom. Attendance will not be taken in class. Students are responsible for material covered in class as well as assignment due dates and test dates.

ZOOM ETIQUETTE Keep mics muted. Use spacebar to speak. You can ask questions directly without "raising hand". Avoid sending me messages using the chat box.

MAKEUP POLICY No makeup will be given for missed tests and assignments without valid and/or written excuses. The instructor will make decisions regarding the makeup in the case of valid and/or written excuse. Students with extenuating circumstances should communicate with me as early as possible.

LATE SUBMISSION HW and projects will be penalized -10% for each 24hrs late.

ACADEMIC DISHONEST Academic integrity is fundamental to the process of learning and evaluation of academic performance. Academic dishonesty will not be tolerated. Academic dishonesty includes but is not limited to: cheating, plagiarism, tampering with academic records and examinations, falsifying identity, and being accessory to acts of academic dishonesty. Any such behavior will be reported and dealt with in accordance to the UNO Judicial Code see:www.studentaffairs.uno.edu/studentpolicies/policymanual/academic_dishonesty.cfm

STUDENTS WITH DISABILITIES If you have a specific disability that qualifies you for academic accommodations, please notify the instructor. Students must register with the Office of Disability Services (UC 260) to qualify for special accommodations.

CHANGES IN COURSE REQUIREMENTS Since all classes do not progress at the same rate, the instructor may wish to modify the above-mentioned requirements or their timing as circumstances dictate. If such modification is needed, the student will be given adequate notification.