Course Syllabus

✎ Edit

This syllabus contains the policies and expectations established for this course. Please read the entire syllabus carefully before continuing your enrollment in this course. These policies and expectations are intended to create a productive learning atmosphere for all students. Students should be prepared to abide by these policies and expectations to avoid the risk of losing their opportunity to participate in this course.

The course instructor may modify the standards and requirements set forth in this syllabus at any time.

Definitions used in this syllabus

- •I/me - the instructor (Dr. Albert Park)
- •You, the student – a student in this course
- •Instructional Team – Instructor and Teaching Assistants
- •Us – instructor, teaching assistants, and students
- •TAs – Teaching Assistants
- •Our/the course - DSBA-6165: AI & Deep Learning

Contact Method: email (al.park@uncc.edu)
Office: Woodward Hall 310H
Office Hours: Monday 1pm-3pm. Please send me an email to schedule a Google Meet Meeting.

Course Description

This course will introduce state of the art methods in deep learning while setting a proper context for the growth of deep learning by providing an overview of the broader field of artificial intelligence (AI). Topics will emphasize neural networks and deep learning architectures, but will also include broader AI concepts and application of the deep learning methods to real world problems such as computer vision and natural language processing.

Course Objectives

This course is designed as an introduction to deep learning.

Learning Outcomes

1. Knowledge of the state of the art deep learning methodologies
2. Ability to apply deep learning techniques in modern real life scenarios
3. Ability to use python and DL frameworks (tensorflow, keras, pythorch etc.)
4. Ability to analyze and improve deep learning models

5. Skills to work effectively in hybrid/remote settings

Topics

1. Fundamentals of Deep Learning
   - Neural networks
   - Fundamentals of machine learning
2. Deep Learning in Practice
   - Natural language processing
   - Computer vision
   - Generative deep learning
3. Working in Teams

Time: Monday 5:30 - 8:15

Location: Hybrid. CITY 1102 & Online

Textbooks:

[Deep Learning with Python, Second Edition 2nd Edition by Francois Chollet (Author)](https://www.amazon.com/Learning-Python-Second-Fran%C3%A7ois-Chollet/dp/1617296864/ref=sr_1_1?crid=4SE4AD4W8IS&keywords=deep+learning+with+python+2nd+edition&qid=1657918139&s=books&sprefix=1)

Deep Learning with Python, Second Edition introduces the field of deep learning using Python and the powerful Keras library. In this revised and expanded new edition, Keras creator François Chollet offers insights for both novice and experienced machine learning practitioners. As you move through this book, you'll build your understanding through intuitive explanations, crisp color illustrations, and clear examples. You'll quickly pick up the skills you need to start developing deep-learning applications.

We may also use many other materials (e.g., webpages, youtube) that provide definitions and examples of the concepts from textbook.

Grading:

- 30% Labs

- 20% Assignments

- 50% Projects

Grading will be based on the following scale
- A -- 100% - 90%
- B -- below 90% - 80%
- C -- below 80% - 70%
- D -- below 70% - 60%
- F – below 60%

Participation:

In order for this to be effective, students are expected to do the assigned class preparation (readings, assignments, etc) on time, and participate in lab sessions and the discussion board.

Late Submission Policy:
Your assignments are considered late if they are not completed by the stated due date and time.
If your assignment is late, you will have two additional days to complete it for late credit (depending on whether anything contrary has been stated in the syllabus or assignment instructions). Late credit equals a 20% reduction per day to the grade you would have received. For example, if you would have received a grade of 90% for completing a
particular assignment, you will receive a grade of 70%, if it was one day late.

Extensions:
Should you desire an extension for some reason, you must discuss it with me **before** the assignment is due.

Technology:

Nearly all students have access to some sort of electronic device. Many activities require the usage of a web browser (Chrome), Document (Google Docs, MS Word) or Presentation software. If students have a concern about this requirement, they should contact the professor at the beginning of the term to discuss accommodations.

Discussion Forum:

To ensure that all questions and answers are shared with all students, course-related questions should be posted to the forum: **General Questions and Answers (https://uncc.instructure.com/courses/223325/discussion_topics/1937802)** . Students should only email the instructor if they have a personal issue they need to discuss. If students do email the professor with a non-personal question, the professor reserves the right to post and answer the question using the General Forum. All students should SUBSCRIBE to the General Forum, and consider most posted messages to be equivalent to making clarifications in class.

Why? An individual email to the instructional team is not very efficient for communication about typical course questions. There are also several advantages:
- Crowdsourcing- pick your classmates' brains. Students in the course have a wide variety of backgrounds and experience. With many students and few personnel, another student may be able to provide a useful response more quickly than the instructional team.
- Synchronicity– hey, that's MY question. If you have a question, it is likely that someone else does too, even if they have not asked it yet.
- Vanguard– I hadn't thought of that. Your question may not have occurred to some students, so it may provide a valuable perspective they would otherwise not see.

Discussion Forum Postings Must Not Include Full or Partial Solutions -

For questions on assignments, exams, or other graded coursework, it is not permissible to post your work, in full or in part, directly as part of a question or answer. This amounts to giving your own work/solution to another student and is a violation of academic integrity, which will be strictly upheld. While some detail may be needed, it is usually possible to find a more general way to ask such questions. If additional detail is needed on the specifics of your work, course personnel may request it as part of their response.

Discussion Forum Postings Must Be Course-Related

Please limit the content of course discussion forum postings to course content. Only if a discussion forum is clearly and specifically designated to include off-topic content should the forum be used to discuss matters that are not course-related.

Discussion Forum Postings Must Be Respectful Of Course Personnel and Students

All students are required to abide by the UNC Charlotte Code of Student Responsibility. This includes participation in the discussion forums for the course. This course will be conducted **in an atmosphere of mutual respect**. We encourage, and require your active participation in class discussions. Each of us may have strongly differing opinions on the various topics of class discussions. The conflict of ideas is encouraged and welcome. The orderly questioning of the ideas of others, including those of course personnel, is similarly welcome. However, we will exercise our responsibility to manage the discussions, so that ideas and arguments can proceed in an orderly and respectful fashion. You should expect that if your conduct during class discussions seriously disrupts the atmosphere of mutual respect expected in this course, you will not be permitted to participate further.

UNC Charlotte Email

When email communication about course matters is appropriate, you must use your UNC Charlotte email account. Per University policy, you must have and use your official University email account. It is to this account that all course email communications will be directed. We recognize that many students prefer to use alternate email accounts. But due to privacy concerns and FERPA restrictions, course personnel will NOT send email to any account other than your official University address. You may forward to a personal account if you like, but you are still responsible for communications that course personnel send to your University account, even if the forward fails.

Assignment Responses/Feedback:

The submissions will be the basis for formative feedback that will be given as soon as possible. If you review your weekly submission feedback and follow the recommendations for the report submissions, you will do well in this course.

Project Teams Exposition

Students may find themselves working alone or a group for certain projects or activities. This is okay as groups are not in competition between each other. The rubric based grading prevents that and

establishes the baseline.

Project Teams are NOT there to divide the workload. The goal of a pair or group should be to diversify ideas and strengths, as well as avoid bias and the local maxima. The instructor will never change or adjust an individual students grade based the grading for individual sections of a project report. When students assign another student to write any section of their project report, **they are accepting whatever grade is assigned to that section.** All group members should look over the work of their teammates.

Project Group Removal: Project Groups can split or agree to remove a member of their group at any time. The group must have a **really good** reason for splitting or dismissing a student and provide proper documentation. Discrimination or preferences are not good reasons for removing a group-member (see Non-Discrimination Policy below). A problem student is not formally removed until the professor responds to the request. A dismissed students can either work by themselves or find another student who was dismissed from their group to work with (if there are any). Pairs that split, or students that wanted to work alone can only be re-assigned at the discretion of the professor (this is to prevent friends from ditching their assigned group and working together). If a teams splits or removes a teammate on the day an assignment is due, students should email the professor their completed assignment before the deadline to ensure the grade is not assigned to the entire group.

Academic Integrity (Plagiarism)

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** ⤷ **(http://legal.uncc.edu/policies/up-407)** .

Faculty may ask students to produce identification at examinations and may require students to demonstrate that graded assignments completed outside of class are their own work. While some work maybe done in groups, students should pay close attention to any assignments/exams/work that need to be submitted as individual work. Plagiarism extends to groups who submit work written as a group as individual work. Ask for clarity, do not make assumptions. A helpful self-check resource is this **online Plagiarism Quiz.** ⤷ **(https://www.turnitin.com/static/plagiarism-quiz/)**

Disability 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 retroactive 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. for additional resources, email questions to disability@uncc.edu, or call 704-687-0040 for more information. In this course, all effort has been made to use accessible software and materials. More information on the accessibility of the programs frequently used in this course can be found below:

- Canvas: **https://www.canvaslms.com/accessibility** ⤷ **(https://www.canvaslms.com/accessibility)** .
- Microsoft: **https://www.microsoft.com/enable/microsoft/mission.aspx** ⤷ **(https://www.microsoft.com/enable/microsoft/mission.aspx)**
- Adobe: http://www.adobe.com/accessibility.html

Religious Accommodations for Absences

In accordance with **University Policy 409** ⤷ **(https://legal.uncc.edu/policies/up-409)** , students must submit a **formal request** ⤷ **(https://legal.uncc.edu/sites/legal.uncc.edu/files/media/UP409-ReligiousAccommodationForStudents.pdf)** for absences that are the result of a religious observance. Per the policy, these requests must be submitted before the census date (typically within the first few classes of the semester). The accommodation only covers penalties because of attendance, they do not absolve the students from the work that was due during class.

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 Reporting

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. 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 Charlotte employees, including all faculty members, are considered **Responsible Employees** ⤷ **(https://titleix.uncc.edu/node/43)** 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** ⤷ **(https://cm.maxient.com/reportingform.php?UNCCharlotte)** . 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** ▣ **(http://counselingcenter.uncc.edu/)** , 7-0311); (2) Student Health Center (**studenthealth.uncc.edu** ▣ **(http://studenthealth.uncc.edu/)** , 7-7400); or (3) Center for Wellness Promotion (**wellness.uncc.edu** ▣ **(http://wellness.uncc.edu/)** , 7-7407). Additional information about your options is also available at **titleix.uncc.edu** ▣ **(http://titleix.uncc.edu/)** under the "Students" tab.

Support and Student Services

For other help, be sure to take advantage of the wealth of resources and support available at UNC Charlotte. Some of the resources available to you include the University Writing Resource Center, University Counseling Center, and the J. Murrey Atkins Library. The Student Services Online Backpack will help connect you to these resources: http://distanceed.uncc.edu/student-services/online-backpack.

Food and Shelter Insecurity

Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact Student Assistance and Support Services (SASS) under the Dean of Students Office for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable her to provide any resources that she may possess.

Inclusivity

Preferred Gender Pronoun: This course affirms people of all gender expressions and gender identities. If you prefer to be called a different name than what is indicated on the class roster, please let me know. Feel free to correct me on your preferred gender pronoun. If you have any questions or concerns, please do not hesitate to contact me.
Non-Discrimination: All students and the instructional team 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 for possible conduct action or the Title IX Office. Based on such referral, the Director or designee will determine whether a Formal Charge(s) shall be pursued and whether the Formal Charge(s) constitutes a Minor Violation or a Serious Violation, based on the Student's prior record or facts and circumstances related to the case.

COVID-19 Policy

It is important that you are aware of the university's policies regarding COVID-19.
https://provost.charlotte.edu/pandemic ➦ **(https://provost.charlotte.edu/pandemic)** . Absences in our context refers to missing deadlines. Students are encouraged to work directly with the instructional team regarding their absence(s). For absences related to COVID-19, please adhere to the following:

- Do not come to any in person meetings if you are sick. Please protect your health and the health of others by staying home. Contact your healthcare provider if you believe you are ill.
- If you are sick: If you test positive or are evaluated by a healthcare provider for symptoms of COVID-19, complete this form to alert the University. Representatives from Emergency Management and/or the Student Health Center will follow up with you as necessary, and your instructors will be notified.
- If you have been exposed to COVID-19 positive individuals and/or have been notified to self-quarantine due to exposure, complete this form to alert the University. Representatives from Emergency Management and/or the Student Health Center will follow up with you as necessary, and your instructors will be notified.

To return to campus after being absent due to a COVID-19 diagnosis or due to a period of self-quarantine, students should submit an online request form to Student Assistance and Support Services (SASS). Supporting documentation can be attached directly to the request form and should be from a student's health care provider or the Student Health Center, clearly indicating the dates of absences and the date the student is able to return to class. Instructors will be notified of such absences.

If you are absent from class as a result of a COVID-19 diagnosis or quarantine, the instructional team is committed to help you continue to make progress in the course such as accepting late work, consolidating assignments to make up for missed time, tutoring sessions to help get you caught up and ensure that asynchronous learning options are available. Communicating as much as possible with the instructional team can help reduce the impact on your progress and success in this course. Keep in mind that the final decision for approval of all absences and missed work is determined by me.

Police and Public Safety

Campus security is provided for all students (this includes providing escorts to parking lots). For emergencies call college security at (704) 687-2200. For non-emergencies call 704-687-8300 (Police and Public Safety)

Syllabus Revisions

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 by announcement in Canvas and any changes to this syllabus posted in the Canvas course. Students are encouraged to work directly with the instructional team regarding their absence(s).

Course Summary:

Date	Details	Due
Sun Aug 25, 2024	📝 **Assignment 1 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242233)](https://uncc.instructure.com/courses/223325/assignments/2242233)	due by 11:59pm
	📝 **Introduce yourself!** [(https://uncc.instructure.com/courses/223325/assignments/2242236)](https://uncc.instructure.com/courses/223325/assignments/2242236)	due by 11:59pm
	🚀 **Student Background Survey** [(https://uncc.instructure.com/courses/223325/assignments/2242232)](https://uncc.instructure.com/courses/223325/assignments/2242232)	due by 11:59pm
Mon Aug 26, 2024	📝 **Lab 1 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242237)](https://uncc.instructure.com/courses/223325/assignments/2242237)	due by 5pm
Sat Aug 31, 2024	📝 **Lab 2 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242242)](https://uncc.instructure.com/courses/223325/assignments/2242242)	due by 11:59pm
Sun Sep 8, 2024	📝 **Assignment 2 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242234)](https://uncc.instructure.com/courses/223325/assignments/2242234)	due by 11:59pm
Fri Sep 13, 2024	📝 **Project 1 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242252)](https://uncc.instructure.com/courses/223325/assignments/2242252)	due by 11:59pm
Sat Sep 14, 2024	📝 **Lab 3 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242243)](https://uncc.instructure.com/courses/223325/assignments/2242243)	due by 11:59pm
Fri Sep 20, 2024	📝 **Peer Evaluation Form for Group Work** [(https://uncc.instructure.com/courses/223325/assignments/2242250)](https://uncc.instructure.com/courses/223325/assignments/2242250)	due by 11:59pm
Sat Sep 21, 2024	📝 **Lab 4 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242244)](https://uncc.instructure.com/courses/223325/assignments/2242244)	due by 11:59pm
Sun Sep 22, 2024	📝 **Assignment 3 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242235)](https://uncc.instructure.com/courses/223325/assignments/2242235)	due by 11:59pm
Sat Sep 28, 2024	📝 **Lab 5 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242245)](https://uncc.instructure.com/courses/223325/assignments/2242245)	due by 11:59pm
Sun Sep 29, 2024	📝 **Assignment 4 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2247118)](https://uncc.instructure.com/courses/223325/assignments/2247118)	due by 11:59pm
	📝 **Project 2 - Submission**	due by 11:59pm

Date	Details	Due
	[(https://uncc.instructure.com/courses/223325/assignments/2242253)](https://uncc.instructure.com/courses/223325/assignments/2242253)	
Sat Oct 5, 2024	📝 **Lab 6 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242246)](https://uncc.instructure.com/courses/223325/assignments/2242246)	due by 11:59pm
Sat Oct 19, 2024	📝 **Lab 7 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242247)](https://uncc.instructure.com/courses/223325/assignments/2242247)	due by 11:59pm
Sat Oct 26, 2024	📝 **Lab 8 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242248)](https://uncc.instructure.com/courses/223325/assignments/2242248)	due by 11:59pm
Sat Nov 2, 2024	📝 **Lab 9 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242249)](https://uncc.instructure.com/courses/223325/assignments/2242249)	due by 11:59pm
Fri Nov 8, 2024	📝 **Peer Evaluation Form for Group Work** [(https://uncc.instructure.com/courses/223325/assignments/2242251)](https://uncc.instructure.com/courses/223325/assignments/2242251)	due by 11:59pm
	📝 **Project 3 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242254)](https://uncc.instructure.com/courses/223325/assignments/2242254)	due by 11:59pm
Sat Nov 9, 2024	📝 **Lab 10 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242238)](https://uncc.instructure.com/courses/223325/assignments/2242238)	due by 11:59pm
Sat Nov 16, 2024	📝 **Lab 11 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242239)](https://uncc.instructure.com/courses/223325/assignments/2242239)	due by 11:59pm
Sat Nov 30, 2024	📝 **Lab 12 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242240)](https://uncc.instructure.com/courses/223325/assignments/2242240)	due by 11:59pm
Sat Dec 7, 2024	📝 **Lab 13 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242241)](https://uncc.instructure.com/courses/223325/assignments/2242241)	due by 11:59pm
Mon Dec 9, 2024	📝 **Project 4 - Submission** [(https://uncc.instructure.com/courses/223325/assignments/2242255)](https://uncc.instructure.com/courses/223325/assignments/2242255)	due by 11:59pm