COURSE INFORMATION

Welcome to ADTA 5240/IPAC 4240. I am so excited to have you in class this semester and I look forward to working with all of you throughout the course.

- Harvesting, Storing, and Retrieving Data
- Credit Hours: 3
- Class Times: Wednesdays 6 PM – 7 PM CST (optional)
- Class Building: Online via Zoom (details will be provided in Canvas)

Instructor Contact Information

- Dr. Catalin C. Dinulescu
- Tuesdays 10 AM – 12 PM CST and Thursdays 7 PM - 9 PM CST online via Zoom. Book appointments in 30 minutes increments, at least 12 hours in advance, at the link below:
  - https://outlook.office365.com/owa/calendar/DrD_Office_Hours@tarleton.onmicrosoft.com/bookings/
- On the date and time scheduled, use the following meeting details: Zoom Meeting ID: 8328517755, Direct Link: https://unt.zoom.us/j/8328517755. Copy this link in your browser and hit ‘Enter’ to join the Zoom meeting.
- Other times may be scheduled by email appointment.
- Email: catalin.dinulescu@unt.edu

Teaching Philosophy

I believe students must be given clear direction for them to succeed. It is important that they understand the course learning objectives as documented in the syllabus, and the deadlines for submission of all course work as documented on the course calendar. I have found that if a student understands the learning objectives and the contribution to their professional development of each assignment, the quality of their work improves.

I also believe that students need to be given timely feedback so that they know how to improve and respond to communications from their professor in a timely manner. Timely feedback help students gain self-confidence and inspire them to fully engage in the course material and to believe that they can do well. It is important for students to know that as a professor, I understand that “life happens” and that I will be flexible when a legitimate problem arises. I also think that it is important to establish performance guidelines in the syllabus and to establish a safe and welcoming learning community in each course. It is my responsibility as a teacher to get my students ready for the workforce and to ensure that they are prepared to meet the professional challenges ahead.
Lastly, I believe we can all learn from one another, and I have assignments built around this concept. Research shows that engaging students in the learning process is important to increase their attention and focus and is a tool to practice critical thinking skills which promotes more meaningful learning experiences. I look forward to a wonderful semester and learning along with you!

**Course Pre-requisites, Co-requisites, and/or Other Restrictions**

Required prerequisite courses: NONE

**Course Description**

This course introduces the fundamentals of data engineering, including harvesting (and processing), storing, retrieving, exploring, and visualizing data. The goal of this course is to provide students with both theoretical knowledge and practical experience leading to mastery of the fundamentals of data engineering, using both small and large datasets. As these fundamentals are introduced, exemplary technologies will be employed to illustrate how storage and processing architectures can be constructed. The problems are being considered in the context of big data analytics. Exercises and examples will consider both simple and complex data structures, as well as data that ranges from clean and structured to dirty and unstructured.

The undergraduate class IPAC 4340, will follow along with this same syllabus but assignments and exams will be modified.

**Course Objectives**

**Outcome 1** Develop an understanding of the fundamental concepts of modern data management, including data science life cycle, data scaling, structuring data, and data lakes.

**Outcome 2** Develop knowledge and skills in harvesting, storing, retrieving, and processing data using the cloud technology

**Outcome 3** Develop knowledge and skills in working with the Apache Hadoop framework including Hadoop Distributed File System (HDFS), MapReduce, and Hive, as well as Colossus.

**Outcome 4** Develop knowledge and skills in working with HDFS, Spark, Linux, SQL, BigQuery

**Outcome 5** Develop knowledge and skills in cleansing/wrangling data with Google/Open Refine

**Outcome 6** Introduce students to querying data in BigQuery, Hive, Spark.
Course Topics

- Big Data
- Data analytics life cycle
- Data preprocessing
- Linux
- Distributed File Systems
- Hadoop Ecosystem Foundation
- Data Ingestion/Migration
- Introduction to SQL
- Introduction to Google Cloud Platform
- Google Cloud Platform: Cloud Storage
- Google Cloud Platform: Creating a Bucket
- Google Cloud Platform: Cloud SQL
- Google Cloud Platform: Cloud Spanner
- Google Cloud Platform: BigQuery

Materials – Text, Readings, Supplementary Readings

No textbook is required for this course, but we will have articles to read throughout the semester (these are listed in the weekly modules under content). These books are NOT required but you might find them beneficial for extra reinforcement of the material.


Course Requirements

1. The student will be responsible for checking the announcements in the UNT email and other types of class communication daily.
2. The student will access and follow all course instructions found in the syllabus, announcements, assignments, and all other class-related documents.
3. The student will complete all the class assignments in the time frame specified in the class documents, including the course calendar to participate effectively in-class activities
Assessment & Grading

- There will be GCP-centered homeworks throughout the course.
- There will be discussions.
- There will be one quiz
- There will be one midterm exam.
- There will be one group project

Late-work Penalty Policy

All assignments must be submitted by the due date and time. To allow for more time management flexibility that would help students, this course uses milestone due dates. For example, Assignments 1, 2, and 3 may all be due on Sunday of Week 1 instead of having due dates scattered throughout Week 1. Thus, students can work on these assignments at their own pace and according to their own schedule throughout the week.

As a result of this embedded flexibility, no late work will be accepted, unless triggered by university-approved reasons.

Make-Up Policy

No make-up assignment or exams will be offered except for university-approved reasons.

Mobile Phone Access

Please note that while mobile phone access to the learning platform (e.g., Canvas) may be available, it is a scaled-down version of the respective desktop/laptop computer software application, mainly due to the inherent mobile phone limitations (e.g., screen size, processing power, storage capacity, battery life, etc.). This course, like any other website, is set up primarily for desktop/laptop computer access (and not mobile phones). Therefore, the students should use the mobile phone version with caution (i.e., for information, or non-critical purposes only). This is not different than the mobile customer experience encountered on any other website.

Assignments Submission Integrity

It is the student’s responsibility to check the validity and the integrity of their assignment submission (e.g., that the right files are attached, files are not corrupted, are readable, the submission went through, etc.)
Grading Feedback:

Students will receive formal and informal feedback on the assignments via various means such as grades, rubrics, emails, office hours, etc. Assignment feedback is provided either after submission or after the assignment due date. Students can request more detailed feedback from the instructor at any time.

Attendance Policy

The student is responsible for regular and punctual attendance and is expected to participate in all courses in which the student is enrolled. It is the responsibility of the student to check for announcements daily in case of an emergency. For more information, please see the University of North Texas’ Attendance Policy at: http://policy.unt.edu/policy/15-2-5
This is an online class. However, I will schedule an optional (not mandatory), weekly class session via Zoom on Tuesdays from 6 to 7 PM CST. This is mainly a questions-and-answers opportunity for the students, offered in addition to the scheduled office hours.

Communication

All email course communications (unless specifically stated otherwise) should be done via your UNT email account. General course announcements will be posted in Canvas as well as emailed. Failure to be informed of course information that has been transmitted and/or posted in Canvas will not constitute grounds for special consideration.
Please note that not every question/topic can be effectively addressed via email. Poorly framed / ambiguous/open-ended/complex questions or topics might be better addressed verbally rather than in writing. For example, it might take more time and effort to write down an answer, or one might waste precious time going over 2-3 back-and-forth iterations with clarificatory questions, rather than directly and quickly addressing the question verbally, during office hours, or over the phone. Please choose the right communication vehicle that best meets your needs. Here is a great website provided by CLEAR to give you some communication tips for communicating online: https://clear.unt.edu/online-communication-tips
I generally respond to emails within 24 hours, although it may be longer on weekends, holidays, or other circumstances.

Group Project and Teamwork:

Teamwork is a standard requirement of most jobs. This course requires team work on a group project. The expectation is that each student will contribute a “fair share” to the work with those persons they are assigned with on the team. At the end of the group project, each student will anonymously evaluate the performance of the other team members by using the Peer Review Form
In fairness to all students (based on their contribution levels), the peer evaluation feedback will influence individual team members' grades. Therefore, it is imperative for the student that his/her evaluation of others is objective. With a business (rather than personal) hat on, students should evaluate the work not the person, the facts not the fiction, and only the items that are under that person's control. The group project is graded independently as a team first, then the individual student grades will be calculated as the team grade weighted by the average evaluation scores received from the other team members, according to the table below:

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Met or Exceeded Expectations</td>
</tr>
<tr>
<td>1</td>
<td>Did Not Meet Expectations</td>
</tr>
<tr>
<td>0</td>
<td>No Work Performed</td>
</tr>
</tbody>
</table>

For example:
- If the team grade is 100 and the average peer review score is 1.8 (out of 2 possible) then the individual student grade is determined as $100 \times (1.8/2) = 100 \times 90\% = 90$
- If the team grade is 100 and the average peer review score is 2 (out of 2 possible) then the individual student grade is determined as $100 \times (2/2) = 100 \times 100\% = 100$
- If the team grade is 100 and the average peer review score is 0 (no work performed) then the individual student grade is determined as $100 \times (0/2) = 100 \times 0\% = 0$

### Class Schedule

The following is a tentative schedule. The instructor reserves the right to make modifications to this information throughout the semester. Any changes will be announced to the class in advance. A course calendar is available in Canvas by following the “Syllabus” menu link. It is the student’s responsibility to check for changes in the schedule.

<table>
<thead>
<tr>
<th>Week</th>
<th>Reading / Assignment</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>MODULE 1: Intro to GCP</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Welcome and Class Overview</td>
<td>6/12</td>
</tr>
<tr>
<td>Week 1</td>
<td>Introduction to Big Data</td>
<td>6/19</td>
</tr>
<tr>
<td></td>
<td>Introduction to Google Cloud Platform (GCP)</td>
<td>6/19</td>
</tr>
<tr>
<td>Week 2</td>
<td></td>
<td></td>
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<tr>
<td>----------------</td>
<td>--------------------------</td>
<td>---</td>
</tr>
<tr>
<td>Wk1_Readings</td>
<td></td>
<td>6/19</td>
</tr>
<tr>
<td>Personal Introduction</td>
<td></td>
<td>6/12</td>
</tr>
<tr>
<td>Homework_1</td>
<td></td>
<td>6/19</td>
</tr>
<tr>
<td>Quiz_1</td>
<td></td>
<td>6/19</td>
</tr>
</tbody>
</table>

**MODULE 2: Cloud Storage; Linux Operating System**

<table>
<thead>
<tr>
<th>Week 2</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Introduction to Cloud Storage</td>
<td></td>
<td>6/19</td>
</tr>
<tr>
<td>Introduction to Linux</td>
<td></td>
<td>6/19</td>
</tr>
<tr>
<td>Wk2_Readings</td>
<td></td>
<td>6/19</td>
</tr>
<tr>
<td>Homework_2</td>
<td></td>
<td>6/19</td>
</tr>
<tr>
<td>Homework_3</td>
<td></td>
<td>6/19</td>
</tr>
<tr>
<td>Quiz_2</td>
<td></td>
<td>6/19</td>
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</tbody>
</table>

**MODULE 3: Distributed file system and GCP storage**

<table>
<thead>
<tr>
<th>Week 3</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Introduction to distributed file systems</td>
<td></td>
<td>6/26</td>
</tr>
<tr>
<td>GCP Storage: Structured OLTP, Cloud SQL, &amp; Cloud Spanner</td>
<td></td>
<td>6/26</td>
</tr>
<tr>
<td>Google Cloud Platform Storage: Structured Data: OLAP: BigQuery</td>
<td></td>
<td>6/26</td>
</tr>
<tr>
<td>Wk3_Readings</td>
<td></td>
<td>6/26</td>
</tr>
<tr>
<td>Homework_4</td>
<td></td>
<td>6/26</td>
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<tr>
<td>Homework_5</td>
<td>6/26</td>
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<tr>
<td>Homework_6</td>
<td>6/26</td>
<td></td>
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<tr>
<td>Homework_7</td>
<td>6/26</td>
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</tbody>
</table>

**MODULE 4: Mid-Term Exam**

<table>
<thead>
<tr>
<th>Week 4</th>
<th></th>
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<tbody>
<tr>
<td>Midterm Part 1: Theory</td>
<td>7/3</td>
</tr>
<tr>
<td>Midterm Part 2: Practical</td>
<td>7/3</td>
</tr>
</tbody>
</table>

**MODULE 5: Data Ingestion**

<table>
<thead>
<tr>
<th>Week 5</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>CRISP-DM and Data Ingestion/Migration</td>
<td>7/10</td>
</tr>
<tr>
<td>Harvesting Twitter Data</td>
<td>7/17</td>
</tr>
<tr>
<td>Joining Data from Two Different Publicly Available Datasets</td>
<td>7/10</td>
</tr>
<tr>
<td>Homework_8</td>
<td>7/17</td>
</tr>
<tr>
<td>Homework_9</td>
<td>7/10</td>
</tr>
<tr>
<td>Group Team Build</td>
<td>7/10</td>
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</tbody>
</table>

**MODULE 6: Data Processing**

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<thead>
<tr>
<th>Week 6</th>
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<tbody>
<tr>
<td>Data Prep with OpenRefine</td>
<td>7/17</td>
</tr>
<tr>
<td>BigQuery Queries</td>
<td>7/17</td>
</tr>
<tr>
<td>Homework_10</td>
<td>7/17</td>
</tr>
<tr>
<td>Homework_11</td>
<td>7/17</td>
</tr>
</tbody>
</table>
GRADING POLICY

The student’s grade in the course consists of the following components:

- **Homeworks**: 30%
- **Discussions/Attendance**: 10%
- **Midterm Exam**: 30%
- **Final Group Project**: 30%

The final letter grade will be determined as follows:

- A: 90 – 100 • B: 80 – 89 • C: 65 – 79 • D: 50 – 64 • F: < 50

Course Evaluation

Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification"
(noreply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey they will receive a confirmation email that the survey has been submitted. For additional information, please visit the SPOT website (Links to an external site.) (http://spot.unt.edu/ (Links to an external site.) ) or email spot@unt.edu.

Technical Requirements/Assistance

UNT Help Desk: http://www.unt.edu/helpdesk/index.htm (Links to an external site.)

The University of North Texas provides student technical support in the use of Canvas and support resources. The student help desk may be reached at:

Email: helpdesk@unt.edu
Phone: 940.565-2324
In-Person: Sage Hall, Room 130

Hours (Links to an external site.) are:

- Monday-Thursday 8 am-midnight
- Friday 8 am - 8 pm
- Saturday 9 am -5 pm
- Sunday 8 am-midnight
- Other related hardware or software is necessary for the course: such as headset/microphone for synchronous chats, word processor, etc.
- Canvas technical requirements: https://clear.unt.edu/supported-technologies/canvas/requirements (Links to an external site.)
- Other related hardware or software is necessary for the course: such as headset/microphone for synchronous chats, word processor, etc.

Student Academic Support Services

- Code of Student Conduct: (Links to an external site.) provides Code of Student Conduct along with other useful links
- Office of Disability Access: (Links to an external site.) exists to prevent discrimination based on disability and to help students reach a higher level of independence
- Counseling and Testing Services: (Links to an external site.) provides counseling services to the UNT community, as well as testing services, such as admissions testing, computer-based testing, career testing, and other tests
- UNT Libraries (Links to an external site.)
• **UNT Learning Center: (Links to an external site.)** provides a variety of services, including tutoring, to enhance the student academic experience
• **UNT Writing Center: (Links to an external site.)** offers free writing tutoring to all UNT students, undergraduates, and graduates, including online tutoring
• **Succeed at UNT: (Links to an external site.)** information regarding how to be a successful student at UNT

**Course Policies**

**Online Assignments and Examinations Policy**

The University is committed to providing a reliable online course system to all users. However, in the event of an unexpected server outage or any unusual technical difficulty which prevents students from completing a time-sensitive assessment activity, the instructor will extend the time windows and provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and contact the UNT Student Help Desk: helpdesk@unt.edu or 940.565.2324. The instructor and the UNT Student Help Desk will work with the student to resolve any issues at the earliest possible time.

**Instructor Responsibilities and Feedback**

The instructor is responsible for responding to student questions about assignments and projects, about the course material presented, and for providing additional resources to enhance understanding of course material. Timely feedback is essential for student success and the instructor is responsible for providing timely feedback to students throughout the course. The instructor or TA will grade submitted assignments and will post grades for students within 10 days of the assignment due date.

**COVID-19 Impact on Attendance**

**Face Coverings**

UNT encourages everyone to wear a face-covering when indoors, regardless of vaccination status, to protect themselves and others from COVID infection, as recommended by current CDC guidelines. Face covering guidelines could change based on community health conditions.

**Attendance**

Students are expected to attend class meetings regularly and to abide by the attendance policy established for the course. It is important that you communicate with the professor and the instructional team prior to being absent, so you, the professor, and the instructional team can
discuss and mitigate the impact of the absence on your attainment of course learning goals. Please inform the professor and instructional team if you are unable to attend class meetings because you are ill, in mindfulness of the health and safety of everyone in our community.

If you are experiencing any symptoms of COVID-19 (https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html) please seek medical attention from the Student Health and Wellness Center (940-565-2333 or askSHWC@unt.edu) or your health care provider PRIOR to coming to campus. UNT also requires you to contact the UNT COVID Team at COVID@unt.edu for guidance on actions to take due to symptoms, pending or positive test results, or potential exposure.

**Course Materials for Remote Instruction**

Remote instruction may be necessary if community health conditions change, or you need to self-isolate or quarantine due to COVID-19. Students will need access to a webcam and microphone to participate in fully remote portions of the class. Information on how to be successful in a remote learning environment can be found at https://online.unt.edu/learn

**UNT Policies**

**Academic Integrity Policy**

Academic Integrity Standards and Consequences. According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

All works submitted for credit must be original works created by the scholar uniquely for the class. It is considered inappropriate and unethical to make duplicate submissions of a single work for credit in multiple classes unless specifically requested by the instructor. Students must submit their own work. It is **unacceptable** to copy work from another student or copy and paste from a website.

**PLEASE NOTE:** “Plagiarism is a very serious offense at UNT. Even if you don't mean to plagiarize, you can still commit academic dishonesty. When you are accepted to UNT, you are expected to adhere to our policies and standards (Links to an external site.) Academic Integrity (Links to an external site.) (as defined in University 07.012) in the Code of Student Conduct (Links to an external site.). Major violations can result in expulsion from the university. “Please see https://guides.library.unt.edu/plagiarism/atunt#:~:text=Plagiarism%20is%20a%20very%20se
ADA Policy

UNT makes reasonable academic accommodations for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to the faculty to begin a private discussion regarding one’s specific course needs. Students may request accommodations at any time; however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member before implementation in each class. For additional information see the ODA website at disability.unt.edu.

Emergency Notification & Procedures

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Blackboard for contingency plans for covering course materials.

Retention of Student Records

Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Blackboard online system, including grading information and comments, is also stored in a safe electronic environment for one year. Students have the right to view their individual records; however, information about students’ records will not be divulged to other individuals without proper written consent. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University’s policy. See UNT Policy 10.10, Records Management and Retention for additional information.

Acceptable Student Behavior

Student behavior that interferes with an instructor’s ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the
classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The University's expectations for student conduct apply to all instructional forums, including University and electronic classrooms, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at deanofstudents.unt.edu/conduct (Links to an external site.).

Access to Information - Eagle Connect

Students’ access point for business and academic services at UNT is located at: my.unt.edu (Links to an external site.). All official communication from the University will be delivered to a student’s Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward e-mail: eagleconnect.unt.edu/ (Links to an external site.)

Sexual Assault Prevention

UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT’s Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim’s compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off-campus. The Survivor Advocates can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at 940-565-2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at oeo@unt.edu or at (940) 565 2759.

Important Notice for F-1 Students taking Distance Education Courses

Federal Regulation

To read detailed Immigration and Customs Enforcement regulations for F-1 students taking online courses, please go to the Electronic Code of Federal Regulations website at http://www.ecfr.gov/ (Links to an external site.). The specific portion concerning distance education courses is located at Title 8 CFR 214.2 Paragraph (f)(6)(i)(G).

The paragraph reads:
(G) For F-1 students enrolled in classes for credit or classroom hours, no more than the equivalent of one class or three credits per session, term, semester, trimester, or quarter may be counted toward the full course of study requirement if the class is taken online or through distance education and does not require the student's physical attendance for classes, examination or other purposes integral to the completion of the class. An online or distance education course is a course that is offered principally through the use of television, audio, or computer transmission including open broadcast, closed circuit, cable, microwave, or satellite, audio conferencing, or computer conferencing. If the F-1 student's course of study is in a language study program, no online or distance education classes may be considered to count toward a student's full course of study requirement.

**University of North Texas Compliance**

To comply with immigration regulations, an F-1 visa holder within the United States may need to engage in an on-campus experiential component for this course. This component (which must be approved in advance by the instructor) can include activities such as taking an on-campus exam, participating in an on-campus lecture or lab activity, or other on-campus experiences integral to the completion of this course.

If such an on-campus activity is required, it is the student’s responsibility to do the following:

1. Submit a written request to the instructor for an on-campus experiential component within one week of the start of the course.

2. Ensure that the activity on campus takes place and the instructor documents it in writing with a notice sent to the International Student and Scholar Services Office. ISIS has a form available that you may use for this purpose.

Because the decision may have serious immigration consequences, if an F-1 student is unsure about his or her need to participate in an on-campus experiential component for this course, s/he should contact the UNT International Student and Scholar Services Office (telephone 940-565-2195 or email internationaladvising@unt.edu) to get clarification before the one-week deadline.

**Student Verification**

UNT takes measures to protect the integrity of educational credentials awarded to students enrolled in distance education courses by verifying student identity, protecting student privacy, and notifying students of any special meeting times/locations or additional charges associated with student identity verification in distance education courses.
See [UNT Policy 07-002 Student Identity Verification, Privacy, and Notification and Distance Education Courses (Links to an external site.)](https://www.unt.edu).  

**Use of Student Work**

A student owns the copyright for all work (e.g., software, photographs, reports, presentations, and email postings) he or she creates within a class, and the University is not entitled to use any student work without the student’s permission unless all of the following criteria are met:

- The work is used only once.
- The work is not used in its entirety.
- The use of the work does not affect any potential profits from the work.
- The student is not identified.
- The work is identified as student work.

If the use of the work does not meet all of the above criteria, then the University office or department using the work must obtain the student’s written permission.

Download the UNT System Permission, Waiver, and Release Form

**Transmission and Recording of Student Images in Electronically Delivered Courses**

1. No permission is needed from a student for his or her image or voice to be transmitted live via videoconference or streaming media, but all students should be informed when courses are to be conducted using either method of delivery.

2. In the event an instructor records a student presentation, he or she must obtain permission from the student using a signed release to use the recording for future classes in accordance with the Use of Student-Created Work guidelines above.

3. Instructors who video-record their class lectures intending to re-use some or all of the recordings for future class offerings must notify students on the course syllabus if students' images may appear on the video. Instructors are also advised to provide accommodation for students who do not wish to appear in class recordings.

Example: This course employs lecture capture technology to record class sessions. Students may occasionally appear on the video. The lecture recordings will be available to you for study purposes and may also be reused in future course offerings.
No notification is needed if only audio and slide capture is used or if the video only records the instructor's image. However, the instructor is encouraged to let students know the recordings will be available to them for study purposes.