

Course Syllabus

Fall 2024

Math 2414

Integral Calculus

Section	Time	Room	Instructor
001	3:00pm - 3:50pm	SCI_2.210	Bentley Garrett
002	4:00pm - 4:50pm	SCI_2.210	Bentley Garrett
003	3:00pm - 3:50pm	SCI_2.230	Runzhou Liu
004	9:00am - 9:50am	SCI_2.225	Kelly Aman
005	10:00am - 10:50am	SCI_2.210	Anh Tran
006	11:00am - 11:50am	SCI_2.235	Anh Tran
007	12:00pm - 12:50pm	SCI_3.230	Runzhou Liu
008	2:00pm - 2:50pm	SCI_2.215	Runzhou Liu
009	9:00am - 9:50am	SOM_2.107	Mylinh Nguyen
010	10:00am - 10:50am	SCI_3.250	Kelly Aman
012	1:00pm - 1:50pm	SCI_3.250	Bentley Garrett
013	11:00am - 11:50am	FN_2.214	Runzhou Liu
014	11:00am - 11:50am	SCI_3.250	Mylinh Nguyen

Instructor Information

Instructor: Dr. Kelly Aman
E-Mail: Kelly.Aman@utdallas.edu
Phone: 972-883-6588 (leave message)
Office: FO 2.410 D
Office Hours: MWF 2 – 3pm, or by appt.

Instructor: Dr. Runzhou Liu
E-Mail: runzhou.liu@utdallas.edu
Phone: 972-883-6424
Office: FN 2.206
Office Hours:

Instructor: Dr. Anh Tran
E-Mail: att140830@utdallas.edu
Phone: 972-883-6587
Office: FO 3.704F
Office Hours:

Instructor: Dr. Bentley Garrett
E-Mail: btg032000@utdallas.edu
Phone: 972-883-4236
Office: FA 2.406
Office Hours:

Instructor: Dr. Mylinh Nguyen
E-Mail: mylinh.nguyen@utdallas.edu
Phone: 972-883-6546
Office: FA 2.404
Office Hours:

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

Prerequisite: A grade of C- or better in either MATH 2413 or MATH 2417 or equivalent.

Co-requisites: Enrollment in one of the following problem sections is **mandatory**.

Section	Time	Room	TA Name	e-mail (...@utdallas.edu)
301	T 8:00am - 9:50am	SCI_3.270	Menu Pathirana	mhp220006
302	R 8:00am - 9:50am	SCI_3.270	Sungbum Kim	sxx200270
303	T 10:00am - 11:50am	SCI_3.270	Ran Tong	rxt200012
304	R 10:00am - 11:50am	SCI_3.270	Sungbum Kim	sxx200270
305	T 1:00pm - 2:50pm	SCI_3.270	Jiacheng Li	jxl210004
306	R 1:00pm - 2:50pm	SCI_3.270	Ali Tamim	mxt220007
307	T 3:00pm - 4:50pm	SCI_3.270	Collins Boateng	cxh200013
308	R 3:00pm - 4:50pm	SCI_3.270	Md Maidul Husain	mxh220076
309	R 3:00pm - 4:50pm	SCI_3.240	Ran Tong	rxt200012
310	R 8:00am - 9:50am	SCI_3.260	Md Maidul Husain	mxh220076
311	T 1:00pm - 2:50pm	SCI_3.260	Yizhe He	yxx230029
312	R 1:00pm - 2:50pm	SCI_3.260	Md Farhad Hossain	mxh220100
313	T 3:00pm - 4:50pm	SCI_3.260	Menu Pathirana	mhp220006
314	R 3:00pm - 4:50pm	SCI_3.260	Tonny Ramarolahy	rxr210120
315	T 8:00am - 9:50am	SCI_3.260	Shiny Chakraborty	sxx230080
316	R 3:00pm - 4:50pm	FN_2.204	Dami Oyekan	oao200001
317	T 1:00pm - 2:50pm	SCI_3.240	Md Farhad Hossain	mxh220100
318	R 1:00pm - 2:50pm	SCI_3.240	Thomas Yeboah	txy230015
319	T 10:00am - 11:50am	SCI_3.240	Jiacheng Li	jxl210004
320	R 10:00am - 11:50am	SCI_3.240	Ali Tamim	mxt220007
321	T 4:00pm - 5:50pm	FN_2.106	Sharaf Anjum	sxx220040
322	R 10:00am - 11:50am	FN_2.204	Collins Boateng	cxh200013
323	T 3:00pm - 4:50pm	SCI_3.220	Tonny Ramarolahy	rxr210120
324	R 3:00pm - 4:50pm	SCI_3.220	Yizhe He	yxx230029
325	T 4:00pm - 5:50pm	CB_1.222	Shiny Chakraborty	sxx230080
326	T 8:00am - 9:50am	CB_1.206	Cole Cash	csc220006
327	T 3:00pm - 4:50pm	FN_2.204	Dami Oyekan	oao200001
328	R 1:00pm - 2:50pm	FN_2.204	Sharaf Anjum	sxx220040
329	T 1:00pm - 2:50pm	FN_2.204	Thomas Yeboah	txy230015
330	T 8:00am - 9:50am	FN_2.204	Astrit Tola	axt200006
331	R 8:00am - 9:50am	FN_2.204	Cole Cash	csc220006

During problem section, the TA will:

- review class material and relevant material from prerequisite courses
- return and discuss quizzes and exams
- work problems or have students work problems
- entertain questions
- **administer quizzes**

Learning mathematics is a time consuming endeavor which provides rich rewards. Like learning a new language, the more time you spend with mathematics the better your comprehension. It is expected that a typical student will spend 3 hours studying outside of class for every hour inside class. Thus, in **MATH 2414**, one should expect to spend at least **9-12** hours studying each week. You will be assigned homework and practice problems that are consistent with this number of hours.

Course Description

Continuation of Math 2413. Course covers topics in integral calculus, sequences and series. Topics include techniques of integration, improper integrals, and applications. Polar coordinates, parametric equations, and arc length. Infinite sequences and series, tests for convergence, power series, radius of convergence and Taylor series. Three lecture hours and two discussion hours a week; registration in a problem section as well as the exam section is required with Math 2414. Not all MATH/STAT courses may be counted toward various degree plans. Please consult your degree plan to determine the appropriate MATH/STAT course requirements. Cannot be used to replace Math 2419.

Student Learning Objectives/Outcomes

- (1) Students will be able to formulate real world problems into mathematical statements.
 - Given a narrative description of a problem that lends itself to mathematical analysis, the student will clearly define any variables introduced and provide an appropriate function or formula relating those variables.
 - (2) Students will be able to develop solutions to mathematical problems at the level appropriate to each course.
 - The student will evaluate an indefinite or definite integral of a continuous function.
 - Students will determine the convergence or divergence of an improper integral or an infinite series.
 - (3) Students will be able to describe or demonstrate mathematical solutions either numerically or graphically.
 - Students shall provide a qualitative, planar sketch which clearly indicates prescribed attributes.
 - Students will provide numerical results in a prescribed manner, as a percent, an interval, or within a specified error bound.
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Required Textbooks, Materials and Additional Resources

- Recommended textbook (Suggested for studying and catching up on missed content.)
Calculus, Early Transcendentals, 8th Edition, by James Stewart. (Other editions should work)
Hardcover – ISBN: [9781285741550](#)
eBook – ISBN: [9781305799059](#)
- **eLearning:** <http://elearning.utdallas.edu> You must enter your NETID username and password to logon to eLearning. You will need to access the course **MATH 2414.701: INTEGRAL CALCULUS**. Here, you will find the syllabus, problem sets, handouts, etc., as well as a record of your grades. Any messages/e-mails concerning the class will also appear on eLearning.
- **WeBWork and GlobalProtect VPN:** Online homework will be done through the free WeBWork system, but it requires a bit of work to access.
To access WeBWork:
 - 1) If on campus, go to MATH 2414.701 in elearning, go to the “DHW” folder and just follow the link to the assignment.
 - 2) a) If off campus, first follow the instructions on the webpage below to set up GlobalProtect VPN if you do not already have it: <https://atlas.utdallas.edu/TDClient/30/Portal/KB/ArticleDet?ID=152>
If you have trouble installing or connecting, please click the IT Support link at the top of this webpage.
b) Connect to the UTD system as described on the site.
c) Once connected, go to MATH 2414.701 in elearning, go to the “DHW” folder and just follow the link to the assignment.**Note:** Campus housing internet is considered “off campus” and requires the VPN as well.
- **Peer Lead Team Learning (PLTL):** PLTL is an academic support program sponsored by the Student Success Center. PLTL provides a learning experience for students who meet in small groups once a week with a Peer Leader who helps guide them through problems related to this course. PLTL sessions meet once a week for 1 1/2 hours with a group of up to eight students and one leader. You should be receiving an email explaining how to apply.

- **Calculators:** On very rare occasions, a scientific calculator is needed. Graphing calculators, programmable calculators, calculators with non-numeric displays, or any calculators that perform calculus operations are NOT ALLOWED on quizzes or exams.

Homework Assignments

There will be about 14 digital homework sets (DHWs) and about 5 handwritten homework sets (GHWs). Each week, the DHWs will be assigned on WeBWork. These assignments will normally be posted each Sunday morning and will be due by 11:59pm the Monday of the following week. (See schedule for due dates.) GHWs will be posted in pdf form (with instructions at the top) on eLearning. You will be notified later in class and/or by email when these assignments will be posted and due. (The tentative GHW schedule is below.)

Academic Calendar

Please double-check these withdrawal dates on www.utdallas.edu:

8/19 - 9/4	Students may withdraw from a class without record.
9/5 – 11/5	Students may withdraw from a class with signatures and receive a W.

Grade Policy

The course grade is determined from the following:

Weights:	10%	DHWs scaled to 100%
	10%	GHWs scaled to 100%
	15%	Quizzes scaled to 100%
	40%	Exam 1 and Exam 2, combined
	25%	Final Exam

Grade Scale	[96.5,100].....A+	[92.5,96.5).....A	[89.5,92.5).....A-
	[86.5,89.5).....B+	[82.5,86.5).....B	[79.5,82.5).....B-
	[76.5,79.5).....C+	[72.5,76.5).....C	[69.5,72.5).....C-
	[66.5,69.5).....D+	[62.5,66.5).....D	[59.5,62.5).....D-
	[0,59.5).....F		

- Homework will constitute 20% of your course grade. There will be around 14 digital homework sets (DHWs) and about 5 handwritten homework sets (GHWs).
- Quizzes will constitute 15% of your course grade. There will be around 11 quizzes. **No makeups will be allowed**, but the lowest 2 scores will be dropped (**except the last quiz**). Each quiz will be administered during the problem section and will be returned to you at the next meeting of your problem section. **Again, the last quiz CANNOT be dropped.**
- Major exams constitute 40% of your course grade. The lower of the 2 major exam grades will constitute 15% of the course grade; the greater will constitute 25%. Graded exams will be returned during problem section.
- Final exam - is not optional, is comprehensive, and constitutes 25% of your course grade. Final exams are not returned to the student but are held for review for one year. Contact your instructor if you'd like to look over it.

Schedule (Subject to change)

Week		Topics	Posted	Due
1 8/19	M W F	Review limits Review Derivatives Review Integrals	DHW 1	None,
2 8/26	M W F	6.2 – Volume, Disk/Washer Method 6.3 – Volume, Shell Method 7.1 – Integration by Parts (Indefinite)	DHW 2	DHW 1 (Mon 8/26) Quiz 1 (In prob sec)
3 9/2	M W F	No class – DHW still due 7.1 – Integration by Parts (Definite) 7.2 – Trig Integrals (sin and cos)	DHW 3	DHW 2 (Mon 9/2) Quiz 2 (in prob sec)
4 9/9	M W F	7.2 – Trig Integrals (sec and tan) 7.3 – Trig Substitution 7.3 – Trig Substitution, cont.	DHW 4 GHW 1	DHW 3 (Mon 9/9) Quiz 3 (in prob sec)
5 9/16	M W F	7.4 – Partial Fractions 7.4 – Partial Fractions, cont. 7.4 – Partial Fractions, 7.5 - Strategy	DHW 5 GHW 2	DHW 4 (Mon 9/16) GHW 1 (In prob sec) Quiz 4 (In prob sec)
6 9/23	M W F	7.8 – Improper Integrals (Type 1) 7.8 – Improper Integrals (Type 2) 8.1 – Arc Length	DHW 6	DHW 5 (Mon, 9/23) Exam1 Fri, 9/27, 7:00-8:15pm
7 9/30	M W F	8.2 – Surface Area 9.3 – Separable Equations 11.1 - Sequences	DHW 7	DHW 6 (Mon, 9/30) Quiz 5 (In prob sec)
8 10/7	M W F	11.1 – Sequences, cont. 11.2 – Series 11.2 – Series, cont.	DHW 8 GHW 3	DHW 7 (Mon, 10/7) GHW 2 (In prob sec) Quiz 6 (In prob sec)
9 10/14	M W F	11.3 – Integral Test 11.3 – Approx., 11.4 – Comparison Test 11.4 – Limit Comparison Test	DHW 9	DHW 8 (Mon, 10/14) GHW 3 (In prob sec) Quiz 7 (In prob sec)
10 10/21	M W F	11.5 – Alternating Series 11.6 – Absolute Convergence 11.6 – Ratio and Root Tests	DHW 10 GHW 4	DHW 9 (Mon, 10/21) Exam2 Fri, 10/25, 7:00-8:15pm
11 10/28	M W F	11.7 – Strategy for Series 11.8 – Power Series 11.8 – Power Series, cont.	DHW 11	DHW 10 (Mon, 10/28) Quiz 8 (In prob sec)
12 11/4	M W F	11.9 – Converting Functions to Series 11.9 – Calculus on Series 11.10 – Introduction to Maclaurin Series	DHW 12	DHW 11 (Mon, 11/4) Quiz 9 (In prob sec)
13 11/11	M W F	11.10 – Integrals Using Maclaurin Series 10.1 – Parametric Curves 10.2 – Parametric Derivative	DHW 13 GHW 5	DHW 12 (Mon, 11/11) GHW 4 (In prob sec) Quiz 10 (In prob sec)
14 11/18	M W F	10.2 – Param. Arc Length, Surface Area 10.3 – Polar Coordinates 10.3 – Polar Coordinates, Derivative	DHW 14	DHW 13 (Mon, 11/18) Quiz 11 (In prob sec)
11/25 – 11/29		Thanksgiving break		
15 12/2 – 12/5	M W	10.3 – Polar Derivative 10.4 – Polar Area – Last Day	Practice (Polar)	DHW 14 (Mon, 12/2) GHW 5 (In prob sec)

Final Exam: TBA

Course & Instructor Policies

Attendance: Daily attendance may be taken.

Citizenship: Any action that disturbs your classmates or interrupts the lecture is unacceptable. Examples of such actions are:

- (a) Entering the classroom late - be as punctual as possible.
- (b) Leaving the classroom before break or before the end of lecture.
- (c) Cell phones, ringers, buzzers, beepers, alarms, blackberries - turn them off! unless you are a member of an emergency response team.

An apology is expected from anyone creating such a disturbance.

Student participation in class is desired, however, please raise your hand to speak and avoid having side conversations with your classmates.

There will be **no extra credit**

Assignment policies

- (a) There will be no make-up exams unless proof of a valid excuse is given.
- (b) Exams and quizzes are closed book, without notes, and without unapproved calculators. Or other devices
- (c) **SHOW ALL WORK** on quizzes and exams. Unsupported answers are considered miracles and, however inspirational, will receive little or no credit. Graded quizzes and major exams will be returned to you as soon as possible. Any document not picked up by the end of finals week will be destroyed.

Technical Support

If you experience any problems with your UTD account you may send an email to: assist@utdallas.edu , or call the UTD Computer Helpdesk at 972-883-2911.

Intercollegiate Competitions

Students involved in a UTD sanctioned competitive activity must supply the instructor with a letter certifying his/her eligibility to participate in such a competition. Said letter may be obtained from the Intercollegiate Compliance Officer. It is the students' responsibility to discern scheduling conflicts and to inform the instructor well in advance of a class, quiz, or exam that will be missed due to a competition. The instructor will make reasonable accommodation to resolve the conflict.

Field Trip Policies

Off-campus Instruction and Course Activities

Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at the website address http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm. Additional information is available from the office of the school dean. Below is a description of any travel and/or risk-related activity associated with this course.

Student Conduct & Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD printed publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Series 50000, Board of Regents, The University*

of Texas System, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391) and online at <http://www.utdallas.edu/judicialaffairs/UTDJudicialAffairs-HOPV.html>

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic Dishonesty, any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

Copyright Notice

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted materials, including music and software. Copying, displaying, reproducing, or distributing copyrighted works may infringe the copyright owner's rights and such infringement is subject to appropriate disciplinary action as well as criminal penalties provided by federal law. Usage of such material is only appropriate when that usage constitutes "fair use" under the Copyright Act. As a UT Dallas student, you are required to follow the institution's copyright policy (Policy Memorandum 84-I.3-46). For more information about the fair use exemption, see <http://www.utsystem.edu/ogc/intellectualproperty/copypol2.htm>

Email Use

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal from Class

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of F.

Office of Student Accessibility

The goal of the OSA is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Their contact information is:

studentaccess@utdallas.edu
972-883-2098
Office: AD 2.224
Mon-Fri 8 a.m. to 5:00 p.m.

If you anticipate issues related to the format or requirements of this course, please meet with the Coordinator of Disability Services. The Coordinator is available to discuss ways to ensure your full participation in the course. If you determine that formal, disability-related accommodations are necessary, it is very important that you be registered with Disability Services to notify them of your eligibility for reasonable accommodations. Disability Services can then plan how best to coordinate your accommodations.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the

institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

These descriptions and timelines are subject to change at the discretion of the Professor.