

MATH 2261

ANALYTIC GEOMETRY & CALCULUS I

Instructions for Instructors and Course Syllabus Template

Instructions for Instructors

Use the syllabus template for creating your MATH 2261 syllabus. Please fill in blanks and areas highlighted in **red** and delete any items that you do not use and add other items not mentioned here. For example, if you use MyMathLab in your course, then it should be mentioned on the syllabus. Specific style decisions (fonts, table layout, etc.) are up to the instructor.

Your course should align to the following:

Standards, Goals, Objectives, or Outcomes

- Area A2 (*Students will demonstrate mathematical proficiency by analyzing a variety of functions and solving various equations*).
- Area D (*Students will demonstrate understanding of the physical universe and the nature of science, and they will use scientific methods and/or mathematical reasoning and concepts to solve problems*).
- Specific Learning Outcomes: In this course the student will learn the methods and applications of differential calculus and the motivation for the integral calculus. Properly using the language and notation of calculus, students will analyze functions and solve applied problems. Upon completion of the course, the intent of the instructor is that the students will be able to:
 1. Compute limits of algebraic and transcendental functions.
 2. State, use, and interpret the definitions of continuity and the derivative in terms of limits.
 3. Formulate derivatives of algebraic and transcendental functions using the power, product, quotient, and chain rules.
 4. Analyze and construct graphs of functions by using and combining calculus and precalculus methods.
 5. Apply the derivative to calculate rates of change and solve applied optimization problems.
 6. Demonstrate how antidifferentiation and Riemann sums relate to the integral calculus.
 7. Use the Fundamental Theorem of Calculus and substitution to compute definite and indefinite integrals.

Further Information for Instructors

- Questions intended to assess the achievement of specific course objectives will be included in the final exam for every section of MATH 2261 according to the rotation set by the VSU General Education Council. These questions may be supplemented with further questions at the discretion of each instructor; however, to ensure validity of the assessment data, the assessment questions **must** appear on the final exam and must be made mandatory for all students to complete.
- At the end of the term, all students will be expected to complete an online Student Opinion of Instruction survey (SOI) that will be available through SmartEvals. Students will receive an email notification through their VSU email address when the SOI is available (generally at least one week before the end of the term). SOI responses are anonymous to instructors/administrators. Instructors

will be able to view only a summary of all responses two weeks after they have submitted final grades. While instructors will not be able to view individual responses or to access any of the data until after final grade submission, they will be able to see which students have or have not completed their SOIs, and student compliance may be considered in the determination of the final course grade. These compliance and non-compliance reports will not be available once instructors are able to access the results. Complete information about the SOIs, including how to access the survey and a timetable for this term is available at <https://www.valdosta.edu/academics/academic-affairs/sois/directions-for-accessing-and-completing-sois.php>

- Undergraduate students are limited to ten course withdrawals during their enrollment at VSU, and may withdraw “passing” before Midterm. Students must initiate the withdrawal using Banner. Ten or more withdrawals will be changed to WF – withdraw failing – and is calculated in the student’s GPA as an “F”. Students cannot withdraw after Midterm unless the student is leaving school entirely, which is referred to as a “hardship withdrawal.” The student needs to see the Dean of Students to initiate a hardship withdrawal. For more information, please see the VSU policy on Withdrawal at <https://www.valdosta.edu/academics/academic-affairs/advising/withdrawal-policy.php>
- At VSU, a “drop” is part of the normal registration process. Students can register for their classes as they desire when Banner is open for registration. The last registration period for Fall and Spring generally ends on the fifth day of the semester (Friday), so students can add and drop courses up until that point with no help needed from anyone. If a student drops a course, then she/he does not have to pay fees for that course. For students who attend class beyond the first week of class, a withdraw is appropriate, not a drop. Students can use Banner to withdraw from class up until midterm without anyone’s permission. When a student withdraws, they do not get a reimbursement of fees, and the withdraw counts toward the student’s ten-withdraw maximum.

Of course, that’s the ideal. Now the Registrar’s Office also has a Late Registration Add/Drop Form that it provides students to add/drop a course from their schedule after the online registration period. This seems like mixed signals, but the paper form is only supposed to be used in extenuating circumstances. If a student brings a drop/add form for you to sign as the instructor of the course being added or dropped, then please carefully read the instructions on the form. According to the drop instructions on the form, if a student has attended class “beyond the online registration period,” which ends on the fifth day of the semester (Friday), then we are not supposed to allow the student to drop at this point. Generally, if a student has an extenuating reason on the form and you wrote “N” to state that the student has not attended the class, then the department head signs the form and the form successfully makes it through the bursary and registrar’s.

Please note that statements required by the university, such as the Title IX and Access Office Statements, are subject to change, so check the course syllabi template at the VSU Academic Affairs web site to ensure your statements are updated: <https://www.valdosta.edu/academics/academic-affairs/syllabi.php>

- Text Summary for Thomas' Calculus: Early Transcendentals, 14ed.

1.1*	Functions and their Graphs	3.7	Implicit Differentiation
1.2*	Combining Functions; Shifting and Scaling Graphs	3.8	Derivatives of Inverse Functions and Logarithms
1.3*	Trigonometric Functions	3.9	Inverse Trigonometric Functions
1.4*	Graphing with Calculators and Computers	3.10	Related Rates
1.5*	Exponential Functions	3.11	Linearization and Differentials (<i>optional</i>)
1.6*	Inverse Functions and Logarithms	4.1	Extreme Values of Functions
2.1	Rates of Change and Tangents to Curves	4.2	The Mean Value Theorem (<i>optional</i>)
2.2	Limit of a Function and Limit Laws	4.3	Monotonic Functions and the First Derivative Test
2.3	The Precise Definition of Limit	4.4	Concavity and Curve Sketching
2.4	One-Sided Limits	4.5	Indeterminate Forms and L'Hôpital's Rule
2.5	Continuity	4.6	Applied Optimization
2.6	Limits Involving Infinity; Asymptotes of Graphs	4.7	Newton's Method (<i>optional</i>)
3.1	Tangents and the Derivative at a Point	4.8	Antiderivatives
3.2	The Derivative as a Function	5.1	Area and Estimating with Finite Sums
3.3	Rules for Polynomials, Exponentials, Products, and Quotients	5.2	Sigma Notation and Limits of Finite Sums
3.4	The Derivative as a Rate of Change	5.3	The Definite Integral
3.5	Derivatives of Trigonometric Functions	5.4	The Fundamental Theorem of Calculus
3.6	The Chain Rule	5.5	Indefinite Integrals and the Substitution Method

*The amount of time for review in Chapter 1 is left to the instructor. Instructors may choose to introduce topics as needed.

***Note:** 5.6 is not covered in MATH 2261

- **Timeline** (Please note, it is important to cover all non-optional material, including chapter 5, in order to properly prepare students for MATH 2262). All chapter and section numbers refer to Thomas' Calculus: Early Transcendentals, 14ed.
 - Chapter 1. Functions..... 2—9 hours

- Included topics: Review of Pre-calculus – functions, domain and range, combining and transforming functions, graphs, trigonometric functions, exponential and logarithmic functions, inverse functions.
 - Chapter 2. Limits and Continuity..... 9—12 hours
 - Included topics: Limits, continuity, asymptotes.
 - Chapter 3. Differentiation..... 12—20 hours
 - Included topics: Definition of derivative, tangent lines, derivative of polynomials, exponential, logarithmic, and trigonometric functions, product and quotient rules, chain rule, derivative of inverse functions, rates of change, implicit differentiation, related rates, linearization (optional).
 - Chapter 4. Applications of Derivatives..... 9—12 hours
 - Included topics: Maximum and minimum values, concavity, graphing using Calculus, L'Hôpital's rule, optimization, Newton's method (optional), antiderivatives.
 - Chapter 5. Integration..... 6—9 hours
 - Included topics: Riemann sums, area and distance, definite and indefinite integral, fundamental theorem of Calculus, substitution rule.
- **Sample Lecture Schedule.** The following schedule represents one possible way to structure the material of MATH 2261. Individual instructors have the freedom to adjust their own schedules as they see fit, and to include review and test days as necessary. Topics indicated by a star are optional, however this sample schedule includes every topic.
 - *Week 1.* 1.1—3 (Functions and graphs*; Combining, shifting, and scaling graphs*; Trigonometric functions*)
 - *Week 2.* 1.4—6 (Graphing calculators*; Exponential functions*; Logarithms and other inverse functions*)
 - *Week 3.* 2.1—2 (Rates of change and tangent lines; Limits)
 - *Week 4.* 2.3—4 (Precise definition of limit; One-sided limits)
 - *Week 5.* 2.4—6 (Continuity; Limits and infinity)
 - *Week 6.* 3.1—2 (Derivative at a point; Derivative as a function)
 - *Week 7.* 3.3—4 (Derivative rules; Derivative as a rate of change)
 - *Week 8.* 3.5—6 (Derivatives of trigonometric functions; Chain rule)

- *Week 9.* 3.7—9 (Implicit differentiation; Derivatives of inverse functions; Derivatives of inverse trigonometric functions)
- *Week 10.* 3.10—11 (Related rates; Linearization*)
- *Week 11.* 4.1—3 (Extreme values; Mean Value Theorem*; First derivative test)
- *Week 12.* 4.4—5 (Concavity; L'Hôpital's rule)
- *Week 13.* 4.6—8 (Optimization; Newton's method*; Antiderivatives)
- *Week 14.* 5.1—3 (Estimating area; Sigma notation; Definite integrals)
- *Week 15.* 5.4—5 (Fundamental Theorem of Calculus; Indefinite integrals and substitution method)

MATH 2261

ANALYTIC GEOMETRY & CALCULUS I SYLLABUS TEMPLATE

Instructor Information

- Instructor: **Name**
- Instructor contact info: **Office number, phone number, VSU email address**
- Office hours: *(follow departmental policy for the expected number of office hours per week)*

Course Information

- Course number: MATH 2261. Credit hours: ____.
- Section: ____ . CRN: ____ . Semester: ____ . Year: ____ .
- Building and Room number: ____ .
- Meeting days and times: ____ .
- Department of Mathematics, College of Science & Mathematics, Valdosta State University.

Prerequisites and Required Materials

- Pre-requisites: MATH 1112 or MATH 1113, with a C or higher.
- Required Textbook: Thomas, Weir, and Hass. Thomas' Calculus: Early Transcendentals, Single Variable plus MyMathLab, 14ed. Addison Wesley (Pearson). ISBN-13: 9780134439419.
- **Include Day 1 Information or notify the bookstore that your students will not be using the Day 1 program and should not be charged for it. See the sample Day 1 entry at the end of this document.**
- Other resources: Any other required materials or programs for your course, such as calculator, BlazeView access, MyMathLab, Mathematica, compass and straightedge, etc.
- **Include Technology Requirements. Describe the technology needed for your course. See the sample entry at the end of this document for a course using MyMathLab online software.**

Course Description

- Introduction to limits, derivatives, integration, the fundamental theorem of calculus, and applications

- Student Learning Outcomes (from the Department):

In this course the student will learn the methods and applications of differential calculus and the motivation for the integral calculus. Properly using the language and notation of calculus, students will analyze functions and solve applied problems. Upon completion of the course, the intent of the instructor is that the students will be able to:

1. Compute limits of algebraic and transcendental functions.
2. State, use, and interpret the definitions of continuity and the derivative in terms of limits.
3. Formulate derivatives of algebraic and transcendental functions using the power, product, quotient, and chain rules.
4. Analyze and construct graphs of functions by using and combining calculus and precalculus methods.

5. Apply the derivative to calculate rates of change and solve applied optimization problems.
6. Demonstrate how antidifferentiation and Riemann sums relate to the integral calculus.
7. Use the Fundamental Theorem of Calculus and substitution to compute definite and indefinite integrals.

Tentative Course Schedule

- Include important university dates, such as holidays and the last day to withdraw.
- Include a tentative schedule for assessments used in the course grade, such as unit exams, projects, the final exam, etc., or refer to where due dates can be found (for example, “due dates for homework are in MyMathLab”). Also, include a statement that assessment dates are tentative and may be subject to change.
- Include the university-scheduled final exam time.

Topics

- Include the topics covered. Many students need this to transfer the course.
- Topics could be incorporated into the above Course Schedule

Assignments (Exams, Projects, Homework, etc.)

- General description of the assignments
- Due dates, including the official date of the final exam as indicated by the Registrar
- Policies for missed assignments, make-up assignments, late assignments, and/or extra credit

Recommended Syllabus Statement:

Make-Up Work: Make up work or alternative assignments will be **determined by the professor and at the sole discretion of the professor. These assignments may or may not exactly duplicate the** original and will not entitle other students to the same alternatives since they may not have experienced the same situations.

(Detailed information for individual assignments may be provided separately.)

Assessment or Evaluation Policy

- Explanation of how much each assignment contributes to the overall grade for the class, by providing percentages and/or point values for each type of assignment. If attendance/tardiness contribute to the course grade, mention this here.
- List of specific assignments: (as necessary)
- **Note: The final exam is mandatory for all students and comprehensive. The final exam comprises 20-30% of the overall course grade.**

Classroom Policies

- **Attendance and tardiness:** Instructors must clearly outline their absence/participation and tardiness expectations in their course syllabus, including any penalties for absence or non-participation and tardiness as well as any procedures for missed work. Any absence policy should conform to the university policy.

University Attendance Policy from the VSU catalogue:

“The University expects that all students shall regularly attend all scheduled class meetings held for instruction or examination. . . . It is recognized that class attendance is essentially a matter between students and their instructors. Instructors must explain their absence policy in the course syllabus. All students are held responsible for knowing the specific attendance requirements as prescribed by their instructors and for the satisfactory make-up work missed by absences. When students are to be absent from class, they should immediately contact the instructor. A student who misses more than 20% of the scheduled classes of a course will be subject to receive a failing grade in the course.”

- **Getting Help Learning Math:** Reaching out to get help when learning mathematics is part of the learning process. Some noteworthy learning resources available to you are:
 - **The Academic Support Center:** The Academic Support Center (ASC) provides free peer tutoring in core curriculum courses, including math, writing, sciences, social sciences, and languages. **The ASC also provides supplemental instruction (tutor-led study group sessions) for some courses (adapt this statement based on whether or not a peer facilitator is embedded in your course).** Drop by the ASC in Odum Library, 2nd floor, call (229)-333-7570 to make an appointment, email them at asc@valdosta.edu, or visit their website www.valdosta.edu/asc for more information.
 - **ThinkingStorm** is a 24/7 online tutoring service provided by the Academic Support Center through Blazeview. **You may want to include login instructions login instructions here. They may change in the future. Current (2021) login instructions can be found at the end of this document.**
 - The **Mathematics Tutoring Lab**, located in Nevins Hall 1104, provides tutoring help on a walk-in basis (no appointment needed). **Hours vary each semester, so you may want to include a statement that students can expect to see a schedule soon.**
- **Accommodations Statement:** **Instructors must provide a statement in the syllabus on how students should proceed in order to receive classroom accommodations because of a documented disability.**

(From VSU's Access Office <http://www.valdosta.edu/student/disability/faculty-and-staff-resources.php>):

Students with disabilities who are experiencing barriers in this course may contact the Access Office for assistance in determining and implementing reasonable accommodations. The Access Office is located in Farbar Hall. The phone numbers are 229-245-2498 (V) and 229-375-5871 (Video Phone). For more information, please visit <http://www.valdosta.edu/student/disability/> or email: access@valdosta.edu.

- **Academic Integrity:** Instructors should provide a brief statement explaining their expectations for academic integrity and detailing how incidents of cheating and plagiarism will be handled in the class.

(From VSU's Academic Integrity Code. The full code is available at

<http://www.valdosta.edu/academics/academic-affairs/vp-office/academic-honesty-policies-and-procedures.php> "Academic integrity is the responsibility of all VSU faculty and students. Faculty members should promote academic integrity by including clear instruction on the components of academic integrity and clearly defining the penalties for cheating and plagiarism in their course syllabi. Students are responsible for knowing and abiding by the Academic Integrity Policy as set forth in the Student Code of Conduct and the faculty members' syllabi. All students are expected to do their own work and to uphold a high standard of academic ethics."

Full information on Academic Honesty at VSU is available at

<http://www.valdosta.edu/academics/academic-affairs/vp-office/academic-honesty-at-vsuhp>

- **Classroom demeanor or conduct:** Instructors should provide their expectations of students' behavior in the classroom and/or in situations outside of class or in online environments (i.e., use of electronic devices, classroom courtesy, etc.).

- **Communication:** Instructors should specify the appropriate channels for official class communication. All VSU-related correspondence should be conducted via VSU email addresses or Blazeview for both student and instructor. Grades should only be discussed within a password-protected environment such as BlazeVIEW. Instructors should explain their standard for professional communication when students use email or Blazeview, such as putting the course name in the subject line of emails, including a salutation, not including usage of text slang, etc.

- **SOI Statement:** At the end of the term, all students will be expected to complete an online Student Opinion of Instruction survey (SOI) that will be available through SmartEvals. Students will receive an email notification through their VSU email address when the SOI is available (generally at least one week before the end of the term). SOI responses are anonymous to instructors/administrators. Instructors will only be able to access results after they have submitted final course grades. Before final submission, instructors will not be able to see any responses, but they can see the percentage of students who have or have not completed their SOIs. While instructors will not be able to see student names, an automated system will send a reminder email to those who have not completed their SOI. Students who withdraw or drop a course will also be sent invitations to complete the Dropped Course Survey. Complete information about the SOIs, including how to access the survey, is available on the [SOI Procedures webpage](#).

- **Title IX Statement:** Valdosta State University (VSU) is committed to creating a diverse and inclusive work and learning environment free from discrimination and harassment. VSU is dedicated to creating an environment where all campus community members feel valued, respected, and included. VSU prohibits discrimination on the basis of race, color, ethnicity, national origin, sex (including sexual harassment and sexual violence), sexual orientation, gender identity, religion, age, disability, genetic information, or veteran status, in the University's programs and activities as required by applicable laws

and regulations such as Title IX. The individual designated with responsibility for coordination of compliance efforts and receipt of inquiries concerning nondiscrimination policies is the University's Title IX Coordinator: Ms. Selenseia Holmes, titleix@valosta.edu, Student Union, Suite 3106, Valdosta State University, Valdosta, Georgia 31698, 229-333-5941.

Day 1 Information:

If the Day 1 program was implemented by the department and bookstore for this course, and you are using Day 1 resources, then below is a sample entry for your syllabus that describes the Day 1 Program.

If the Day 1 program was implemented by the department and bookstore for this course, but you are not using Day 1 resources, then notify the bookstore that you will not be using the Day 1 resources so that the students do not get charged for a resource they are not going to use.

Day1 Program:

MATH 2261 is participating in VSU's textbook program called Day 1. After enrolling in the course, you will receive an e-mail from the VSU Bookstore with instructions on how to access the course content. The purpose of the Day 1 program is to ensure that you have access to the digital course materials on or before the first day of class at a highly competitive rate. Everyone enrolled in the course will automatically have access to the digital course materials through the Add/Drop date. Those who have not opted-out or dropped the class by the Add/Drop date will receive a charge from the bookstore on their student account. You have the ability to Opt-Out through the Add/Drop date via the link in the email sent to you by the VSU bookstore. However, if you opt-out, then you will lose access to the required materials.

If you opted-out and lost access to the required materials, carefully read these **required** specific steps to purchase access to your materials: To gain access to the Day 1 course materials, you must contact to the campus bookstore and pay a **higher** price than the opt-in choice. Upon payment, your name and course information will be collected and added to Blazeview 24-48 hours after you complete this process. After this process is completed, you will then be able to access your course materials.

****Please be aware that any publisher access code for this Day 1 course purchased anywhere else outside of the process detailed above will not give you access to these specific course materials.****

Technology Requirements:

Technology issues are not acceptable excuses for failing to submit or complete assignments. If an issue should arise, take the time to contact the (Blazeview) D2L Help Center for technical support to resolve the problem. Accommodations will be made when there are system wide errors or issues that affect the entire class.

Website: <https://www.valdosta.edu/academics/elearning/blazeview.php> TOLL FREE Phone: 1-855-772-0423

Before beginning your coursework, there are several steps you must complete to ensure you have the tools and resources to complete the coursework. Please read the following carefully before you begin your coursework.

1. Browser check

Browsers that are not supported for BlazeView (BV) will cause you problems in the course. A system check is located on the main page of BV when you first log into the system.

PC Users: Use Chrome, Firefox or Edge for your browser for BV.

Mac Users: Safari is the recommended browser for BV.

2. Plug-ins

It is possible that you will need plug-ins in this course such as Adobe Acrobat Reader or others.

3. Audio/Video

Some courses use audio and/or video presentations. If you have a documented and declared disability reasonable accommodations will be provided, if requested by the student, according to the recommendations of the Access Office for Students with Disabilities at their institution.

4. Internet Connection

You will need a high-speed Internet connection for this course. DSL or cable at home or a high bandwidth connection on a campus are suitable

5. Computer Labs

Computer Labs are available on campus. Check the VSU website for locations. If you have technology issues then you may need to utilize these.

ThinkingStorm: Current (2021) instructions for accessing ThinkStorm are below

To access expert online tutors for help with this course, login to BlazeView and click on Resources. In the drop-down menu, select ThinkingStorm. The link is also in the Getting Started folder. Online tutors are available every day, including in the evenings and on weekends. You should make every effort to be online through this service at least once each week to be sure that your questions are answered before attempting a quiz.

Other things you might want to include:

Time Requirement

As with any college course, you will need to devote time daily to study and do assignments. A general rule of thumb is that a college student should spend two to three hours per course hour reading, studying or doing homework. This means you should be spending a minimum of eight hours a week on this course OUTSIDE of class time.

As a general rule for a college student, if you carry a course load of 15 Hours then then you should be spending roughly 30 hours of study time and 15 hours in class. This 45 hours is the equivalent of a full time job – the reason that a student with this load is called a full time student.

Student Success Portal

The instructor has access to the Student Success Portal and may use it to notify Central Advising and the Student Success Center if a student appears to be having attendance or academic problems. Either of those can then contact Student Housing if needed to check on students. All of these are here to help you succeed in your coursework and offer help/suggestions in making that happen.

Civility Statement

Each student is expected to follow the VSU Student Code of Conduct with regard to behavior in the classroom or online. Inappropriate behavior includes any activity that may detract from your fellow classmates' learning experience or from your instructor's ability to conduct class.

Mental Health Services

As a student, you may experience a range of challenges that can interfere with learning, such as strained or violent relationships, death and loss, increased anxiety, substance use, feeling down, difficulty concentrating and/or lack of motivation. These may diminish your academic performance or reduce your ability to participate in daily activities. VSU services are available and treatment does work. You can learn more about confidential mental health services available on campus at: <http://www.valdosta.edu/student/student-services/counseling-center/>. 24-hour emergency help is also available through the University Police at 229-259-5555 who will contact on-call counselors or appropriate resources for support.

Privacy Statement

There may be links established between this course and other entities and sites on the World Wide Web, Internet or other areas that are not under the control of, nor maintained by your professor(s) or Valdosta State University (VSU). These links do not necessarily constitute an endorsement by

your professor(s) or VSU, and VSU has no obligation to monitor such sites, and user agrees that neither your professor(s) nor VSU is responsible for the content of such sites, nor any technical or other problems associated with any such third-party site, links, or usage.