



COURSE SYLLABUS

COURSE TITLE: Calculus for Technology 1
NUMBER/SECTION: MATH 221-0AJ
CRN: 26943

CONTACT INFORMATION

Instructor:

First Name: Andrew
Last Name: Strawn
Phone Number: (812) 332-1559 (Bloomington campus) **press 6541** & leave a message
Email (Ivy Tech Email): astrawn@ivytech.edu (***email is the best way to contact me***)
Office/Campus Location: I don't have an office.

Instructor's Supervisor:

First Name: Michael
Last Name: Spencer
Phone Number: (812) 374-5159
Email (Ivy Tech Email): mspencer12@ivytech.edu
Office/Campus Location: Columbus campus, room M-4

Most technical issues can be solved with a quick phone call. If you need technical help with Campus Connect, Blackboard, or email, contact Ivy Line at 1-888-IVY-LINE (1-888-489-5463) and select option 4.

Online Learning Support:

First Name: Dylan
Last Name: Hughes
Phone Number: (812) 374-5200
Email (Ivy Tech Email): dhughes52@ivytech.edu
Blackboard IM ID: dhughes
Columbus IT Help Desk: r10-cats@lists.ivytech.edu
(812) 374-5200

COURSE OUTLINE OF RECORD

COURSE TITLE: Calculus for Technology I

COURSE NUMBER: MATH 221

PREREQUISITES: Demonstrated competency through appropriate assessment, MATH 136 College Algebra and MATH 137 Trigonometry with Analytic Geometry

SCHOOL: Liberal Arts and Sciences

PROGRAM: Liberal Arts

CREDIT HOURS: 3

CONTACT HOURS: Lecture: 3

DATE OF LAST REVISION: Fall, 2011

EFFECTIVE DATE OF THIS REVISION: Fall, 2014

CATALOG DESCRIPTION: First course in a two-semester sequence in the techniques of calculus, with an emphasis on how they are applied to technology. Topics include limits, continuity, first and second derivatives, definite and indefinite integrals, and applications of these concepts.

MAJOR COURSE LEARNING OBJECTIVES: Upon successful completion of this course the student will be expected to:

1. Understand basic properties of circles, ellipses, and parabolas.
2. Define and determine limits. Use the limit theorems to find limits, including limits at infinity.
3. Define and determine continuity of a function.
4. Find the derivative of a function from the limit definition.
5. Find derivatives of polynomial and radical functions using the Power Rule and other differentiation rules.
6. Interpret the derivative as a rate of change.
7. Find derivatives of products, quotients, and composite functions.
8. Find equations of tangent and normal lines to curves.
9. Review and differentiate trigonometric functions.
10. Find related rates and solve related rates problems.
11. Use the first and second derivatives to find local and absolute extrema, determine concavity and inflection points, and find intervals on which a function is increasing or decreasing.
12. Solve applied optimization problems.
13. Find instantaneous velocity and acceleration of an object.
14. Define and use differentials.
15. Determine area under a curve by limits of finite sums.
16. Evaluate definite integrals using the Fundamental Theorem of Calculus, and find areas under a curve or between curves using definite integrals.
17. Find indefinite integrals using the basic integration formulas and by substitution.
18. Find volumes of revolution using the disk, washer, and shell methods.
19. Find centroids, and do applied problems in work and fluid pressure.
20. Find the mean value and the root mean square of a function on an interval.

COURSE CONTENT: Topical areas of study include –

Limits	Applications of derivatives
Continuity and discontinuity	Integrals
Derivatives	Applications of integrals

REQUIRED TEXT AND MATERIALS



A real, paper textbook is ***not required***. A subscription to the MyMathLab online homework site includes an electronic copy of this textbook. Students wanting a real book may search online at the many sources of used books or obtain a copy from the Ivy Tech online bookstore (see below). The following information may be helpful in such cases.

Title: *University Calculus: Elements with Early Transcendentals*

Author: **Hass, Weir & Thomas**

Edition: 1st Ed.

Publisher: Pearson

ISBN-13: 9780321533487



UNIVERSITY
CALCULUS

ELEMENTS

with Early Transcendentals

HASS WEIR THOMAS

The bundle includes the MyMathLab access code.



- **MyMathLab access code** (included with a new textbook bundle, not necessarily with used textbooks)
The access code (subscription) is available at real, “bricks-and-mortar” Ivy Tech bookstores, at the online Ivy Tech Bookstore (see below), or directly from Pearson’s MyMathLab website <http://www.pearsonmylabandmastering.com/northamerica/>
As of 7/13/14, the cost of the MyMathLab access code appears to be \$95.20 directly from Pearson, and \$114.00 from the Ivy Tech online bookstore.
- **Scientific Calculator**

CALCULATOR USE

Calculators may be used for ALL activities in this class, including exams. However, the following types of calculators are NOT allowed:

Those that make noise or beep

The calculator function on a cell phone

The calculator within any hand-held device such as a Palm or other PDA, iPad, laptop.

HOW TO ORDER TEXTBOOK/MATERIALS

All books and materials, unless otherwise noted, should be purchased from the Ivy Tech online bookstore. To order the texts required for this class or any other course, go to <http://www.ivytech.bkstr.com>. Students can order all books and materials for all courses from this site – regardless of whether it is an online or on-campus course.

In the future, it is advised that students order textbooks and materials *before* the start of the semester. Students should use a copy of their course schedule to accurately order books and materials. Course schedules can be printed from Campus Connect by logging in at

<http://cc.ivytech.edu>.

Students who live in Indiana and surrounding states will normally receive their book order within one day from the time the book is shipped from the warehouse. Paying for overnight shipping on textbook orders from the bookstore is normally not a good use of money as it does not ensure overnight processing of the order – it only ensures that once the book order has been processed, it will be shipped out overnight.

Technology Needs & Resources

Because this is a web-based course, it is expected that all students who enroll in the course have Internet access and a basic understanding of computer use (e.g., using e-mail, sending attachments via e-mail, using web browsers, using word processing software such as Microsoft Word). Also, it is expected that all students will regularly check their Ivy Tech e-mail accounts (located in Campus Connect) and/or Blackboard messages as indicated below. It is recommended that students log into their course and also check email at least every 48 hours. Email is the PRIMARY method that the college will utilize to contact students. Instructors may use other communication tools, so students should read the Course Communication of this syllabus for specific details.

Visit the Online Learning website at: <http://www.ivytech.edu/online> for more information related to technology requirements for online courses. Check with the nearest campus bookstore for educational pricing if additional software is required for this course.

Most technical issues can be solved with a quick phone call. If you need technical help with Campus Connect, Blackboard, or email, contact Ivy Line at 1-888-IVY-LINE (1-888-489-5463) and select option 4.

SPECIAL TECHNOLOGY NEEDS

In order to access the components of MyMathLab, you need an internet connection and web browser. Bookmark the site: <http://pearsonmylab.com>. This is where you will log in to access all of the publisher provided resources including some graded coursework. Throughout the course, My Math Lab will be referred to as MML.

You must set up your MML account. To register, you will need:

- 1) the access code under the pull tab of the packet which came with your textbook,
- 2) **the course ID for this course: strawn44598**
- 3) your **Ivy Tech** email address
- 4) the zip code for your instructor's Ivy Tech Campus: **47404**

After you register and can log in to the My Math Lab site using the computer you will be using for this course, scroll down on the Course Home page until you see the Browser Check link—click it. This will prepare your computer to run the online videos and demonstrations properly. If you use more than one computer, you will need to run the Browser Check on each computer that you will use to access My Math Lab. You will NOT need to install the TestGen browser plugin.

The computer that you will be using to run these applications must meet certain requirements and have certain components downloaded onto it. **For this reason, you may NOT be able to access MyMathLab from every computer.** For example, public computer labs often have a block on downloading software to the machine. Please keep this in mind and plan ahead because you **MUST** be able to access the site frequently during the course.

To use multimedia material provided, you may also need to download and install additional software (provided at no cost). When you log into the course for the first time, run the **Browser Check** (from MyMathLab Course Home screen) to prepare your computer.

If you need technical assistance with MyMathLab, contact the publisher's Technical Support:

ONLINE

Log in to <http://pearsonmylab.com> . Click Help and Support on the top line menu, then click Student Help.

You may access the support page directly at <http://247pearsoned.custhelp.com/app>

BY PHONE

Call 1-800-677-6337.

COLLEGE POLICIES

Academic Honesty Statement

The College is committed to academic integrity in all its practices. The faculty value intellectual integrity and a high standard of academic conduct. Activities that violate academic integrity undermine the quality and diminish the value of educational achievement.

Cheating on papers, tests, or other academic works is a violation of College rules. No student shall engage in behavior that, in the judgment of the instructor of the class, may be construed as cheating. This may include, but is not limited to, plagiarism or other forms of academic dishonesty such as the acquisition without permission of tests or other academic materials and/or distribution of these materials and other academic work. This includes students who aid and abet as well as those who attempt such behavior.

Copyright Statement

Students shall adhere to the laws governing the use of copyrighted materials. They must insure that their activities comply with fair use and in no way infringe on the copyright or other proprietary rights of others and that the materials used and developed at Ivy Tech Community College contain nothing unlawful, unethical, or libelous and do not constitute any violation of any right of privacy.

ADA Statement

Ivy Tech Community College seeks to provide reasonable accommodations for qualified individuals with documented disabilities. If students need an accommodation because of a documented disability, please contact the Office of Disability Support Services.

COURSE POLICIES & PROCEDURES

Due Dates & Deadlines

The Syllabus and Course Calendar are two important tools to help students understand the course, student and instructor expectations, and deadlines. Both documents can be found under the “Start Here” button in the course within Blackboard.

Students are required to submit work on time for a chance to receive credit. Deadlines for each week/assignment are summarized on the course calendar. Students should check the calendar frequently for deadlines and to be aware of what to expect next. Deadlines are subject to change.

Students are responsible for timely assignment submission. Should a computer system or network go down, students must still turn in work in a timely manner. Don't wait until the last minute. Plan ahead by seeking alternative means for submitting work before needed. Local libraries and all Ivy Tech Community College campuses can serve as alternative resources. Contact the closest/most convenient campus or other public lab for schedules and Internet availability. Not having access to the required software on a home or work computer is **not** a legitimate excuse for turning in homework late.

Attendance Policy – Don't Get Dropped from Class!

While it is important to be timely and on-schedule throughout any course, students need to be aware of an important college policy. Ivy Tech performs administrative drops for students who do not “attend” class early in the semester. Attendance in an online course is determined by whether a student has submitted work or not. Assignments may actually be due on another day (see course calendar), but *students need to turn in something worth points before the NW deadline in order to avoid being dropped for non-attendance.*

To avoid being dropped for non-attendance, students must submit *some* assignment from the course calendar no later than **Saturday, September 9, 2014, 5:00 PM** - Eastern Standard Time.

Am I Required to Come to a Campus for this Class?

Yes, you are required to go to a convenient Ivy Tech campus or other acceptable testing site to take 2 tests. **The tests will have a specific deadline.** However, the course schedule is somewhat flexible allowing you a window of opportunity in which to complete your test.

It is the student's responsibility to take the exams on time regardless of the availability of a proctor. **Please plan ahead to arrange testing times within the proctor's availability in order to complete each test during the provided timeframe.**

Instructional Method

This is an online distance-learning course. Each week's assignments and readings are summarized on the Course Calendar, accessed from the “Start Here” button in Blackboard. It takes a great deal of discipline, self-motivation and effective time management skills to successfully complete an online course. Many students find it helpful to set aside specific times each week to work on course assignments.

Grades

All grades will be maintained in Blackboard's online grade book. Students are responsible to track their progress by referring to the online grade book. Students can generally expect to receive grades and feedback within seven days of the assignment due date. If exceptions occur, the instructor may notify students of changes to this expectation.

Make-Up Policy

Homework assignments will remain open for the duration of the semester. You may work/rework all or part of any assignment for full credit. Any assignment not completed by the due date will be given a score of zero, but that score may be replaced at any time. If a student has a problem or scheduling conflict that prevents the student from submitting an assignment on time, the student should contact the professor immediately. The professor will determine if the seriousness of the problem warrants an extension on the assignment. Unless absolutely unavoidable, students need to contact their instructor *before* missing the deadline – not after. Instructors have the right to decline accepting work for any credit after a deadline passes with a few specific exceptions, including but not limited to:

- If there is an outage of the Blackboard system that is verified by central system administrators, instructors will provide an extension for students to submit work at no penalty.
- If the student has documentation of serious illness or death of a family member, instructors will work with the student to determine an alternate deadline.

Last Day to Withdraw

If a student wishes to withdraw from this course, students are responsible for completing an official withdrawal form with the registrar. Your local registrar contact information can be looked up using the link in the HELP button in your course in Blackboard.

The last day to withdraw from this course is Saturday, November 15, 2014.

Right of Revision

The college reserves the right to change any statements, policies or scheduling as necessary. Students will be informed promptly of any and all changes.

COURSE COMMUNICATION

Instructor Commitment

Ivy Tech Community College instructors are committed to responding to students within 36 hours, including weekends. If a student sends communication, but does not receive a response, they should double-check that the correct communication method was used and that the correct location is being checked for a reply. Students can contact their local Online Technologies Support with questions (<http://ivytech.edu/online/contacts.html>).

COMMUNICATIONS - EMAIL

All students must use the EMAIL function of the course for course related communications. You can send email from within the course (Blackboard) or by going directly to your email inside Campus Connect.

To access email from within the course:

1. Log into Blackboard & enter the course.
2. Click on 'Communication & Tools', then "Send email."
3. Please DO NOT use the MESSAGES feature inside Communication & Tools (you will receive no response).
4. Select "All Instructor Users" to email the instructor.

When using EMAIL, all replies can be found inside your @ivytech.edu inbox inside Campus Connect. In fact, instead of sending EMAIL as described above, you could go directly to your INBOX and type in the recipient's email address in a new message.

To access Campus Connect, go to: <http://cc.ivytech.edu/cp/home/loginf>. After logging in, go to your email by clicking on EMAIL in the list at the top right corner.

Online Communication Etiquette: Students are expected to uphold their responsibilities in terms of appropriate and professional communication with faculty and peers. Please review the 'Students Rights and Responsibilities' section of the student handbook and review common netiquette (Internet etiquette) practices, like those found at: <http://www.albion.com/netiquette/>.

ASSIGNMENTS & GRADING

Proctoring Information

Proctored exams are supervised exams. Every Ivy Tech campus has a testing center where students can take proctored exams. It is the student's responsibility to follow the proctoring procedures at a convenient campus, to arrange for the services of the qualified proctor provided by the campus, and to provide that information to the instructor of the course.

If the proctoring center at that campus does not own and cannot provide the software or special tools required by the assessment, the student is responsible for locating a proctoring center with the required software/tools. As well, if a student does not live near or cannot conveniently get to an Ivy Tech campus, they should contact the instructor early in the semester to discuss options.

A link to approved Ivy Tech exam sites may be found on the front page of [Blackboard](#), under the "Hot Links" box.

How is my grade calculated?

Your grade in this course is determined by the following criteria:

Homework (MyMathLab)	20%
Quizzes (MyMathLab)	20%
Midterm One (Proctored)	30%
Cumulative Final Exam (Proctored)	30%

No extra credit or bonus points will be offered during the course.

Grading Scale

90% - 100%	A
80% - 89%	B
70% - 79%	C
60% - 69%	D
Below 60%	F

ADDITIONAL SUPPORT

Optional Campus Support

Students are welcome to use the services and equipment available at the most convenient Ivy Tech Campus. Services include academic advising, equipment, libraries, and tutoring. Please locate the most convenient Ivy Tech campus by reviewing the information at <http://ivytech.edu/campuses/>.

Library

The Ivy Tech Library is available to students on- and off-campus, offering full text journals, books, and other resources essential for course assignments. The Library can be accessed from the “Library” tab in Blackboard or from the “Library” tab in Campus Connect.

Click for Help

Log into Blackboard at <http://online.ivytech.edu> and visit the “Click for Help” tab for information about computer downloads. This tab provides students with important computer information, including security software, viewer software for users without Microsoft products, Adobe Reader, Flash player, Java, and more.

Disabilities Services

Students with questions or needs for disabilities support services should contact their local Disabilities Support Services director/coordinator. In the future, it is recommended that students contact Disabilities Support Services at least 30 days before the start of the semester. *The contact information listed here is for the disabilities support director/coordinator at the instructor’s local campus.* For information about disabilities support services at another campus, please visit: <http://ivytech.edu/dss/> or Campus Connect (<http://cc.ivytech.edu>).

Disabilities Support Contact:

First Name: Amanda

Last Name: Fronck

Phone Number: (812) 330-6046, Toll-free (866)447-0700, x6046

Email (Ivy Tech Email): afronek@ivytech.edu

Course Requirements With Due Dates

Session	Textbook Sections	Assignments / Assessments	Due Dates
1	1.1, 1.2, 1.3, 1.4	Set up MML Account Discussion - Introductions MML Homework Sections 1.1, 1.2, 1.3, 1.4	Sunday 8/31/14
2	1.6, 1.7, 1.8	MML Homework Sections 1.6, 1.7, 1.8	Sunday 9/7/14
3	2.1, 2.2, 2.3	MML Homework 2.1, 2.2, 2.3 Quiz Chapter 1	Sunday 9/14/14
4	2.4, 2.5, 2.6, 2.7	MML Homework Sections 2.4, 2.5, 2.6, 2.7	Sunday 9/21/14
5	2.8, 2.9, 2.10	MML Homework Sections 2.8, 2.9, 2.10	Sunday 9/28/14
6	2.12, 3.1, 3.2	MML Homework Sections 2.12, 3.1, 3.2 Quiz Chapter 2	Sunday 10/5/14
7	3.3, 3.4, 3.6	MML Homework Sections 3.3, 3.4, 3.6	Sunday 10/12/14
8		Quiz Reviewing Chapters 1, 2, 3 Optional: Midterm Exam-PRACTICE VERSION MIDTERM EXAM (proctored)	Sunday 10/19/14
9	4.1, 4.2, 4.3	MML Homework Sections 4.1, 4.2, 4.3	Sunday 10/26/14
10	4.4, 4.5	MML Homework Sections 4.4, 4.5	Sunday 11/2/14
11	4.6, 4.7	MML Homework Sections 4.6, 4.7 Quiz Chapter 4 Last Day to Withdraw with "W" Saturday, November 15, 2014	Sunday 11/9/14
12	5.1, 5.2, 5.3	MML Homework Sections 5.1, 5.2, 5.3	Sunday 11/16/14
13	5.4, 5.5	MML Homework Sections 5.4, 5.5	Sunday 11/30/14
14	6.1, 6.2	MML Homework Sections 6.1, 6.2 Quiz Chapter 5	Sunday 12/7/14
15	6.4, 6.5, 6.6	MML Homework Section 6.4, 6.5, 6.6 Quiz Reviewing Chapters 4, 5, 6 Optional: Final Exam-PRACTICE VERSION	Sunday 12/14/14
16		FINAL EXAM (proctored)	Sunday 12/21/14