

# **Collin College Mathematics Department** **2017 Spring Faculty Instructor's Syllabus**

**Professor's Website:** <http://iws.collin.edu/ebock>

**Campus:** SPRING CREEK, PLANO (SCC)

**Professor's Name:** Ed Bock

**Office Loc:** H-212

**Phone:** (972) 516-5024

**Semester:** 16-Week

**Email:** [ebock@collin.edu](mailto:ebock@collin.edu)

**Classroom:** J-213

**Fax:** (972) 881-5619

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**Course:** Math-2415    **Sec:** S70    **CRN:** 23291

**Class Meeting Times:** TR 5:30pm - 8:15pm

**Course Title:** Calculus III

**Office Hours:** TR 12:30-1:00pm & 4:30-5:30pm ; W 1:00-4:00pm

**Course Description:** \_\_\_\_\_ or by appointment (arrange via email)

Advanced topics in calculus, including vectors and the geometry of space, vector-valued functions and motion in space, partial differentiation, Lagrange Multipliers, multiple integration and integration in vector fields including the Divergence, Green's, and Stoke's theorems. Lab included.

### Textbook and Required Material:

Calculus/Early Transcendentals, Eighth Edition, James Stewart, ©2016, CENGAGE Learning, ISBN: 978-1-305-59762-4 ; alternatively, WebAssign access code and ebook (ISBN: 978-1-285-85826-5) if student does not opt for a hardbound text. If WA & ebook are utilized, the student should print those several pages covered for each classroom lecture as reference.

**Prerequisite(s):** Math-2414

**Corequisite(s):** NONE

**Census Date:** January 30, 2017

**Withdrawal Date:** March 17, 2017

**Final Exam Date:** May 11, 2017

**Required Graphing Calculator:** TI-83, TI-84, TI-89, or TI-Nspire (CAS allowed)

**College Syllabus Link:** [http://www.collin.edu/math/math\\_syllabi.htm](http://www.collin.edu/math/math_syllabi.htm)

**Student Technical Support:** Provided 24/7 for students at (972) 377-1777 or [sts@collin.edu](mailto:sts@collin.edu).

**College Repeat Policy:** See the "Repeating Courses" section of the Registration Guide for more information.

**Course Delivery Method:** Lecture, lab, and guided practice

**Credit Hrs:** 4

**Lecture Hrs:** 3

**Lab Hrs:** 3

**Supplies:** Graphing Calculator (CAS is allowed) and writing instrument

### Course Requirements:

Attending lectures, completion of homework assignments and group labs, and taking three semester tests and a comprehensive FINAL exam in the classroom at the designated times.

### Student Learning Outcomes: *(Upon completion of this course, the students should be able to do the following)*

1. Perform calculus operations on vector-valued functions, including derivatives, integrals, curvature, displacement, velocity, acceleration and torsion.
2. Perform calculus operations on functions of several variables, including partial derivatives, directional derivatives and multiple integrals. (Empirical/Quantitative)
3. Find extrema and tangent planes. (Critical Thinking)
4. Solve problems using the Fundamental Theorem of Line Integrals, Green's Theorem, the Divergence Theorem, and Stokes' Theorem.
5. Apply computational, conceptual principles of calculus to the solutions of real-world problems. (Communication Skills)

**Method of Evaluation:** *(Grade will be determined by averaging the individual components using the scale shown below)*

LABS	10%	(On paper handed out - turned in same day)	
HOMEWORK	10%	(Problems from the textbook - See page 4)	
TEST #1	20%	covering chapters 12,13	02/09, Thursday
TEST #2	20	covering chapter 14	03/14, Tuesday
TEST #3	20	covering chapter 15	04/06, Thursday
FINAL EXAM	20-40%	comprehensive (includes 16)	05/11, Thursday
** STUDENT GRADE DISPUTES MUST BE SUBMITTED BY EMAIL WITHIN 48 HRS OF RETURN **			

**Grading Scale:** A = 90 – 100    B = 80 – 89    C = 70 – 79    D = 60 – 69    F = 0 – 59

**Project Description and Policy:**

No projects for this class section.

**Attendance Policy:**

Attendance is expected of all students.

**Homework Policy:**

Each homework assignment will consist of problems taken from the textbook (see page 4 of this syllabus).

Each assignment (maximum 10.0 pts) is recorded on its due date and cannot be turned in late nor made up for credit unless student submits official written documentation of reason by an authorized entity, i.e, physician, legal, etc.

**Lab Policy:**

There will be 10 labs worked in the classroom during regular class hours in groups of 3-4 students. These labs will consist of application problems, perhaps drawing together concepts of algebra, geometry, trigonometry, and precalculus in addition to recently discussed calculus topics. Each student must turn in his/her own lab at the end of class period for credit. Due to the fact that labs are meant to be an in-class group activity learning experience, no late remissions will be accepted.

**Quiz Policy:**

No quizzes for this class section.

**Exam Policy:**

Semester tests #1-3 and the FINAL comprehensive exam are taken in the classroom J-213 on the dates listed in the Course Calendar on page 4. One(1) 3x5-inch handwritten index card will be allowed for formulas/notes for each semester test #1-3, and two(2) cards for the FINAL Exam.

If a score of at least 60 is achieved on any one of semester tests #1-3, or if missed for a legitimate reason, i.e. documented medical or personal/family emergency, this particular score will be replaced by a potentially higher FINAL Exam score.

**Make-up Policy:**

For personal or family emergencies and/or medical reasons, any student may request to take a make-up exam in the Spring Creek testing center, room J-232 - check for posted hours. Optionally, again with documentation, the student may have this documented missed exam substituted by his/her FINAL Exam grade.

**Resource Material:**

Any student enrolled in this class has access to the Math Lab located in D-203, 972-881-5921. The Lab is staffed with faculty and tutors; in addition, it offers free tutorial help, graphing calculators, and computer assistance. Check with LRC for video recordings. Collin students may arrange for tutoring with the ACCESS office (D-140) - call 972-881-5898 for scheduling and availability.

**Withdrawal Regulation:**

Students who enroll as an entering freshman or a first-time college student in undergraduate courses at any Texas public community college, technical institute, health sciences institution, or any public university offering undergraduate courses must comply with the legislation of TEC51.907. Visit the Collin webpage: <http://www.collin.edu/gettingstarted/register/withdrawal.html>. Please consult your instructor before you withdraw and check the current Collin Registration Guide for the last official day to withdraw.

**Course Withdrawal:**

To withdraw from this class, you need to do the following:

1. Attain a Drop/Add form from the office of Admission and Records, 972-881-5710,
2. Turn in the completed Drop/Add form to the office of Admission and Records on or prior the withdrawal deadline,
3. Make sure your course withdrawal satisfies the college withdrawal policy;
4. Alternatively, log in to CougarWeb and follow the detailed instructions to *online* withdraw from this particular section.
5. You may receive an F if you do not finish this class and do not withdraw on or prior to the withdrawal deadline.

**Religious Holy Days:**

In accordance with section 51.911 of the Texas Education Code, the college will allow a student who is absent from class for the observance of a religious holy day to take an examination or complete an assignment scheduled for that day within a reasonable time. Please refer to the current Collin Student Handbook.

**Evaluation of Instructions:**

Collin College seeks to improve the learning experience of all students. To assist in evaluating courses, students will be requested to complete an evaluation-of-instruction form near the end of each fall and spring semester.

**ADA Statement:**

It is the policy of Collin County Community College to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, or call 972.881.5898 (V/TTD: 972.881.5950) in a timely manner to arrange for appropriate accommodations.

**Student Code of Conduct:**

It is a violation of the Student Code of Conduct (Section 7-2.4, Other Offenses, item S) to engage in the use of telecommunication or media devices during any class, Collin College lab or other learning environment; here, this includes social networking activities such as texting, talking on the phone, web-browsing from laptops or smart phones, or utilizing any other related electronic devices.

**Academic Ethics:**

Every member of the Collin College community is expected to maintain the highest standards of academic integrity. Collin College may initiate disciplinary proceedings against a student accused of scholastic dishonesty. Scholastic dishonesty includes, but is not limited to, statements, acts, or omissions related to applications for enrollment or the award of a degree, and/or the submission of one's own work material that is not one's own. Scholastic dishonesty may involve, but is not limited to, one or more of the following acts: cheating, plagiarism, collusion, use of annotated texts or teacher's editions, use of information about exams posted on the Internet or electronic medium, and/or falsifying academic records. While specific examples are listed below, this is not an exhaustive list and scholastic dishonesty may encompass other conduct, including any conduct through electronic or computerized means.

**Plagiarism** is the use of an author's words or ideas as if they were his or her own without giving credit to the source, including, but not limited to, failure to acknowledge a direct quotation.

**Cheating** is the willful giving or receiving of information in an unauthorized manner during an examination; collaborating with another student during an examination without authority; using, buying, selling, soliciting, stealing, or otherwise obtaining course assignments and/or examination questions in advance, copying computer or Internet files, using someone else's work for assignments as if it were one's own; or any other dishonest means of attempting to fulfill the requirements of a course.

**Collusion** is intentionally or unintentionally aiding or attempting to aid another in an act of scholastic dishonesty, including but not limited to, failing to secure academic work; providing a paper or project to another student; providing an inappropriate level of assistance; communicating answers to a classmate about an examination or any other course assignment; removing tests or answer sheets from a test site, and allowing a classmate to copy answers. **See the *Collin Student Handbook* for additional information.**

**Academic Penalty for Scholastic Dishonesty:**

Students will receive a zero on those assignments where they were found guilty by the Dean of Students for scholastic dishonesty, i.e., cheating, collusion, etc. as stated above; also, for repeated occurrences of these incidences, students will receive a failing grade in this class section.

**Disclaimer:**

The instructor reserves the right to make changes to this syllabus during the semester in writing and during class hours.

## Course Calendar for Math-2415.S70 (subject to change)

<b>Week 1</b> 01/17 - 01/22	12.1: 3-D Coordinate Systems 12.2: Vectors  12.3: Dot Product		*pg. 796: 11, 13, 19, 35, 37, 45 *pg. 805: 13, 19, 21, 25, 31, 34, 37  *pg. 812: 17, 23d, 33, 49, 51, 57
<b>Week 2</b> 01/23 - 01/29	12.4: Cross product, torque  12.5: Equations of Lines and Planes 12.6: Cylinders and Quadric Surfaces	LAB 1	*pg. 821: 5, 11, 31, 35, 39, 41  *pg. 831: 12, 33, 37, 41, 45, 51, 57, 69, 71 *pg. 839: 11-19(odd), 21-28, 50
<b>Week 3</b> 01/30 - 02/05	13.1: Vector functions and Space Curves 13.2: Derivatives and Integrals of Vector Functions 13.3: Arc Length and Curvature 13.4: Motion in Space - Velocity and Acceleration	HWK 1 DUE  LAB 2	*pg. 853: 1, 7, 12, 17, 21-26, 49 *pg. 860: 7, 13, 21, 25, 35, 39 *pg. 868: 3, 13, 23, 25, 47, 67 *pg. 878: 23, 27, 29, 41, 45
<b>Week 4</b> 02/06 - 02/12	Review Chapters 12, 13  TEST #1 02/09, Thursday	HWK 2 DUE	
<b>Week 5</b> 02/13 - 02/19	14.1: Functions of Several Variables 14.2: Limits and Continuity  14.3: Partial Derivatives	LAB 3	*pg. 899: 3,7,9,15,19,25,31,35,45 *pg. 910: 5, 9, 13, 17, 33, 35  *pg. 923: 3,17,19,21,33,42,47,53,61
<b>Week 6</b> 02/20 - 02/26	14.4: Tangent Planes and Linear Approximations 14.5: Chain Rule  14.6: Directional Derivatives and the Gradient Vector	HWK 3 DUE  LAB 4	*pg. 934: 1,5,11,21,23,33,35,37,38 *pg. 943: 1,5,9,11,23,27,31,35,39,41,43  *pg. 956: 1,5,7,9,11,17,21,25,31,33,41
<b>Week 7</b> 02/27 - 03/05	14.7: Extrema and the Second Derivative Test 14.8: Lagrange Multipliers  Review Chapter 14	HWK 4 DUE LAB 5	*pg. 968: 5, 13, 31, 38, 43, 49, 53, 55 *pg. 977: 3, 11, 33, 39, 43, 44
		<< ----- SPRING BREAK ----- >>	
<b>Week 8</b> 03/13 - 03/19	TEST #2 03/14, Tuesday  15.1: Double Integrals over Rectangles, Iterated Integrals 15.2: Double Integrals over General Regions	HWK 5 DUE	*pg. 999: 7,11,15, 19,23,27, 33,35,39, 43,47 *pg. 1008: 5, 9, 17, 21, 25, 31, 51, 55
<b>Week 9</b> 03/20 - 03/26	15.3: Double Integrals in Polar Coordinates 15.4: Applications  15.5: Surface Area	HWK 6 DUE  LAB 6	*pg. 1014: 9, 11, 17, 21, 25, 27, 35 *pg. 1025: 5, 15, 19, 23  *pg. 1028: 3, 5, 6, 10, 23
<b>Week 10</b> 03/27 - 04/02	15.6: Triple Integrals 15.7: Cylindrical Coordinates 15.8: Triple Integrals in Spherical Coordinates 15.9: Change of Variable in Multiple Integrals, Jacobian	HWK 7 DUE  LAB 7	*pg. 1037: 5, 13, 19, 21, 39, 43, 47 *pg. 1044: 19, 21, 23, 29 *pg. 1050: 17, 21, 23, 25, 35 *pg. 1060: 3, 19, 21, 22, 23, 25
<b>Week 11</b> 04/03 - 04/09	Review Chapter 15  TEST #3 04/06, Thursday	HWK 8 DUE	
<b>Week 12</b> 04/10 - 04/16	16.1: Vector Fields 16.2: Line Integrals  16.3: Fundamental Theorem of Line Integrals	LAB 8	pg. 1061: 1, 7, 11-14, 15-18, 23, 29-32, 33 pg. 1072: 3, 7, 11, 21, 39, 41, 45, 46  pg. 1082: 7, 13, 15, 19, 35
<b>Week 13</b> 04/17 - 04/23	16.4: Green's Theorem 16.5: Curl and Divergence  16.6: Parametric Surfaces	HWK 9 DUE  LAB 9	pg. 1089: 3, 7, 9, 11, 17 pg. 1097: 1, 7, 13, 15, 19  pg. 1108: 21, 23, 25, 33, 35, 39, 41, 45
<b>Week 14</b> 04/24 - 04/30	16.7: Surface Integrals 16.8: Stoke's Theorem  16.9: The Divergence Theorem	HWK 10 DUE  LAB 10	pg. 1120: 17, 21, 23, 25, 29 pg. 1127: 7, 9, 15, 17  pg. 1133: 5, 7, 11, 17
<b>Week 15</b> 05/01 - 05/07	Review Chapter 16  Comprehensive Course Review		
<b>Week 16</b> 05/08 - 05/14	FINALEXAM 05/11, Thursday	HWK 11 DUE (optional)	