

Math 163 **Calculus II Syllabus** Spring 2018, meets MonWed 1:30-3:15p Clifton Murray, UNM-VC
Prerequisite: C or better in Calculus I/Math 162

Murray's Office A126A. Hours MW 3:15-4:15p, T 4:15-5:30p, Th 11:45a-12:30p, 1:15-2:45p, 4:15-5:45p
wcmurray@unm.edu, 505-925-8727

Required Materials: Textbook, Thomas' Calculus, 14th ed., by Hass, Heil, and Weir.
 Scientific Graphing Calculator.

Student Learning Objectives (SLO's): By the end of the course, the student should at least be able to do the following: Find volumes of solids of revolution, calculate work due to a variable force, and find the fluid force against a submerged plate, all using integration; calculate derivatives and integrals of log, exponential, and inverse trig functions; perform integration by parts, by partial fractions, and by trig substitutions when needed; evaluate improper integrals; solve 1st order linear differential equations, both separable and non-separable; expand and identify the nth term in infinite series; apply tests for series' convergence or divergence; perform Taylor series expansions of simple power functions; interpret formulas for the conic sections; convert equations into parametric form; convert between rectangular and polar coordinates.

Disabilities : If you have a documented physical disability which could interfere with learning in a standard classroom environment, please inform the instructor, so accommodations can be made.

Academic dishonesty as defined in the UNM-Valencia catalog includes copying work from other students. Any student found doing this on tests or the final exam is subject to disciplinary action, ranging from a reduced or failing grade for the work &/or the course, to dismissal from the University.

Persistent disruptive behavior which interferes with students' education—such as loud, distractive talking, insulting classmates or the instructor, or other repeated disruptive behavior-- will result in the offenders' being dropped from the course.
 NO text messaging or phone calling is permitted in the classroom—Please turn phones OFF while in the classroom.

Any *sexual misconduct or gender discrimination* observed or heard of by a UNM Faculty member, TA, or GA must be reported to the UNM Office of Equal Opportunity and the Title IX Coordinator. For information regarding what constitutes sexual misconduct see <https://policy.unm.edu/university-policies/2000/2740.html>

Cellphones and similar telecom devices should be OFF at all times during class. No texting during class. No use of these devices during tests is permitted. If a student leaves the classroom during a test, she/he should either leave the phone with the instructor, or else explain why and to whom a message needs to be delivered.

Children in Class Regrettably, children are not allowed in class, due to liability concerns.

Homework: Format: Problems must be **clearly separated**, either by whitespace—more than the whitespace within the problem—or by a bold separation line. Also, either put the **main** prob # -- 5, 13, 29,...(not, subparts a, b, c...)--to the left of the work that follows, *or* make the **main** prob # really BIG. All this is so the instructor can find the problems, and distinguish between them, fast.

Also, many homework problems refer to a curve, or a geometric figure, or a physical application. For such problems, a **sketch** is expected.

Each homework assignment is due the next class day. Homework turned in one class day late will be reduced to a max score of 50%; two or more days late will receive zero credit. If an incomplete assignment is turned in, that will be the only scoring of that assignment; no further credit will be given for remaining work for that assignment.

Tests: A list of relevant formulas will be provided for each test. The student is allowed to make minor notes on these sheets, incl a word naming a quantity in the formula. However, No example problems are allowed—if example calculations/problems are found added to a student's formula sheet during a test, the entire sheet will be confiscated, and the student will be subject to disciplinary action. The instructor may, at any time during tests, inspect any papers or electronic devices being used.

MONDAY

WEDNESDAY

15 JAN MARTIN LUTHER KING DAY TEXT: THOMAS CALCULUS 14th ed.	17 JAN REVIEW BASIC S, FROM CH 8 sec 1: 8.1 # 1, 3, 4, 8, 10, 15, 18, 19, 23, 25, 32, 34
22 JAN 6.1 FIND VOL OF SOLIDS OF REVOLUTION, BY SLICES 6.1 # 2, 4, 17, 35 - SHELLS 6.2 # 17, 15	24 JAN 6.3 ARC LENGTH # 2 6.4 SURFACE AREA OF SOLID OF REV # 13 6.5 WORK BY VBL FORCE # 3, 4, 9, 10
29 JAN MORE 6.5: FORCE DUE TO FLUID STATIC PRESSURE # 35, 36, 38, 42 6.6 ROD CENTER OF MASS & INSTRUCTOR HWK HANDOUT	31 JAN RVW
5 FEB TEST # 1 INTEGRALS, APPLICATIONS	7 FEB 7.1 REVIEW INVERSE FUNCTIONS - NO HWK 7.2 natural log "ln", CALCULUS WITH ln 7.2 # 1, 4, 7, 9, 13, 17, 23, 39, 41, 43, 45, 57
12 FEB 7.3 CALCULUS WITH e^x # 7, 11, 21, 23, 33, 35, 39, 41, 43, 45, 57 7.4 SEPARABLE DIFF EQS # 1a, 1c, 6, 11, 19	14 FEB 7.4 EXPONENTIAL CHANGE # 34, 45 7.5 L'HOPITAL'S RULE # 1, 5, 13, 69 7.6 INVERSE TRIG FUNCTIONS # 1, 3, 9, 13
19 FEB 7.6 CONTIN # 21, 23, 47, 51, 55 7.7 HYPERBOLIC FNS # 1, 5, 6, 13, 41, 51 7.8 WHICH FNS GROW FASTER? # 3a, 3b, 3c, 5a, 5b, 5c	21 FEB RVW
26 FEB TEST # 2 CALCULUS WITH TRANSCENDENTAL FUNCTIONS	28 FEB 8.2 How DO $\int f(x)g(x)dx$? "S. BY PARTS" # 1, 5, 41. 8.3 $\int \sin^m x \cos^n x dx$ # 1, 4, 11, 21
5 MAR 8.4 S BY TRIG SUBST # 1, 5, 9, 15 8.5 $\int \frac{f(x)}{g(x)} dx$ BY "PARTIAL FRACTIONS" # 1, 7, 11, 21	7 MAR 8.7 DOING INTEGRALS NUMERICALLY # 3I, 3II, 23, 25. 8.8 WHAT IF \int_a^b IS "IMPROPER"? # 1, 3, 7, 9, 39, 43
12 MAR SPRING	14 MAR BREAK
19 MAR 9.2 HOW SOLVE 1 ST ORDER LINEAR D.E., EVEN IF NOT SEPARABLE? # 1, 5, 17. APPLICATIONS 9.2 # 26, 9.3 # 14.	21 MAR RVW
26 MAR TEST # 3 TECHNIQUES, SEPARABLE D.E.'S, 1 ST ORDER D.E.'S.	28 MAR 10.1 SEQUENCES # 1, 3, 7, 13, 16, 31, 37 10.2 INFINITE SERIES, ESPEC. GEOMETRIC # 1, 3, 7, 9
2 APR MORE 10.2 INF. SERIES, # 34, 37, 35, 56, 59, 81 TESTS FOR CONV, DIV 10.3 SERIES CONV OR DIV? -- INTEGRAL TEST # 1, 2, 5, 13	4 APR 10.5 RATIO TEST FOR CONV/DIV # 1, 17, 19 10.6 ALTERN. SERIES TEST # 2, 9, 15, 17, 23 10.7 POWER SERIES # 3, 6
9 APR 10.8 THE TAYLOR SERIES # 11, 15, 25 10.10 APPHC OF " " # 15, 29 * BRING GRAPH & CALC NEXT TIME *	11 APR 11.1 PARAMETRIC EQS & CURVES # 3, 5, 7, 29, 31 # 57a, (SKETCH), 57a, 53. (* GRAPH CALCULATOR, EXT CLASS *) 11.2 # 1 (1 ST DERIV IS ENOUGH) # 25
16 APR 11.3 POLAR COORDS # 6a, b, c, d; # 11, 13, 15, 27, 33, 55, 57. 11.5 AREA IN POLAR COORDS # 1	18 APR 11.6 CONIC SECTIONS RVW: # 9, 17, 27 11.7 MORE # 1, 9, 17
23 APR RVW	25 APR TEST # 4 INFINITE SERIES, PARAMETRIC EQS, POLAR COORDS, CONIC SECTIONS
30 APR RVW FOR el FINAL	2 MAY RVW FOR el FINAL
7 MAY	9 MAY FINAL EXAM 1-3P

Late and Missed Work: There are no makeup tests, except in verified emergencies—in such cases, expect a maximum score of 80%. Early tests, however, might can be arranged without penalty.

Homework: 1 day late, -50%. 2 days late, zero credit.

After five accumulated absences, the student may be dropped from the class without further notice.

***Minimum Final Exam Score:** If the score on the final exam is less than 65%, the student will receive a grade of D or less for the course, regardless of other test or homework scores.

Grading:

	Maximum possible points
Homework	100
4 tests	400
Drop lowest one of tests or homework:	-100
Final exam (comprehensive, not dropped)	$\frac{150}{550} \leftarrow$ (if < 97.5, course grade is D or below)
	550 (max poss course total)
$532 \leq x \leq 550$	A+ (unless a test is missed, or homework score is less than 50%)
$512 \leq x < 532$	A (unless a test is missed)
$495 \leq x < 512$	A-
$477 \leq x < 495$	B+
$457 \leq x < 477$	B
$440 \leq x < 457$	B-
$422 \leq x < 440$	C+
$402 \leq x < 422$	C
$385 \leq x < 402$	C-
$330 \leq x < 385$	D
$0 \leq x < 330$	F