

## Calculus I/Math 162 Syllabus

UNM-Valencia Campus

Fall 2019 meets MW 4:30-6:15p

Instructor: Clifton Murray, office A126A, Hours **MW** 2:45-3:45p, **T** 4:15-5:15p, **Th**, 11:45a-12:15p, 1:15-2:45p, 4:15-5:15p.  
[wcmurray@unm.edu](mailto:wcmurray@unm.edu), 505-925-8727

*Prerequisites:* C or better in both Precalculus (Math 150) and Trigonometry (Math 123).

### *Required Materials:*

Text: Thomas' Calculus 14<sup>th</sup> ed. by Weir & Hass—big, expensive, but good all the way thru Calc III at UNM-Valencia.

Calculator: A scientific calculator will be useful on homework, in class, and on tests. Cellphone calculators are **not permitted** on tests.

*Student Learning Objectives:* By the end of the course, the student should be able to explain and solve problems involving at least the following: (1) Limits; (2) the Derivative; (3) the derivative considered as a rate of change; (4) finding local extrema of functions and (5) optimization problems; (6) anti-derivatives ("integrals"); (7) differential equations solvable by integration; (8) estimating changes with differentials; (9) estimation with finite sums; (10) the fundamental theorem of calculus; (11) definite integrals; (12) finding the area between two curves

*Academic Dishonesty*, as defined in the UNM-Valencia catalog, includes copying work from other students. Anyone doing this on tests is subject to disciplinary action, ranging from "a reduced or failing grade for the work in question and/or the course" to "dismissal from the University".

*Disruptive Behavior* is any behavior which interferes with other students' learning &/or with the instructor's ability to guide that learning. Examples include repeated loud talking/ laughing/chatting with your buddy which require repeated warnings from the instructor, or derisive/ridiculing comments toward other students or the instructor (the quickest way to get expelled from the class). Just keep your motives constructive, and it'll be a good educational experience.

Any *sexual misconduct* or gender discrimination brought to a faculty members' attention must, per UNM policy, be reported to the Office of Equal Opportunity and the Title IX Coordinator. For information re what comprises sexual misconduct, see <https://policy.unm.edu/university-policies/2000/2740.html>

*Cell phones and similar devices:* OFF at all times in the classroom. No text messaging while class is in session. No use of cell or smart-phones during tests; if a student temporarily leaves class during a test, she/he must leave phone with instructor.

*Children in Class:* Sorry, but children are not permitted in class due to liability concerns.

*Disabilities:* Should you have a disability requiring special accommodation, please bring the instructor appropriate documentation from Equal Access Services--Jeanne Lujan, coordinator, 505-925-8910, [jmlujan@unm.edu](mailto:jmlujan@unm.edu)

*Homework Format:* Homework problems should be clearly separated, either by whitespace (that means more space between main problems than within the problem), or by a separation line between main probs (not between subprobs a, b, c...). Turn homework in by *day*—not by section. That is, if sec 3.1 and 3.2 are presented on the same day, 3.1 and 3.2 should be grouped together—stapled—not separate.

Also, put the **main** prob #--5, 11, 21,...etc (**not** a,b,c...)—to the left of all other work. This is to help the instructor find and check the main problems fast. So, make the separation between main probs really clear.

*Attendance:* If a student does not appear the 1st two days of class, the instructor may drop that student. Otherwise, after 4 unexcused absences, the student may be dropped from the course without further notice.

*Makeup Work:* Tests: There are no makeup tests, except in verified emergencies—in such cases, expect a maximum score of 80%. (Early tests, on the other hand, might can be arranged without penalty.)

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

*Final Exam Minimum: 65%. Less will result in an automatic course grade of D or lower*, regardless of other test or homework scores.

<i>Grading</i>	Max possible points
Homework	100
4 tests	400
Drop lowest one of tests or homework:	-100
Final Exam* (not dropped, comprehensive)	<u>150</u> *Again: <i>You must make 65% min, for course grade &gt; D.</i>
	550 Max poss course total

Let total course score = x:

$532 \leq x \leq 550$	A+ (unless a test is missed or hmwk score < 50%)
$512 \leq x < 532$	A (unless a test is missed or hmwk score < 50%)
$495 \leq x < 512$	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- *Note—a C- may not satisfy prereq for some courses, or requirements for some programs.
$330 \leq x < 385$	D
$0 \leq x < 330$	F

CALC I / MATH 162  
4:30-6:15p

M

STAPLE HWK BY DAY,  
TURN IN SINGLE PACKETS  
NEXT CLASS DAY

SPRING 2019  
CLIFTON MURRAY

W

14 JAN 2.1 SLOPE = RATE OF CHANGE  
SECANT LINE  $\rightarrow$  TAN LINE  
# 1, 4, 7, 9, 19

16 JAN 2.2 LIMITS  
# 1, 11, 15, 19, 21, 23, 25, 27, 31, 43, 45, 47, 58, 63

21 JAN  
MARTIN LUTHER KING DAY

23 JAN 2.4 ONE-SIDED LIMITS  
# 1, 3, 11, 15, 23, 31  
2.5 CONTINUITY # 1, 4, 5, 13, 17, 19, 31, 35

28 JAN 2.6 INFINITE LIMITS  
# 1, 3, 5, 13, 15, 17, 23, 27, 29, 37, 45, 85

30 JAN  
RVW

4 FEB  
TEST # 1 SLOPES  
TAN LINES  
LIMITS

6 FEB 3.1 <sup>THE</sup> DERIVATIVE # 1, 5, 29, 31  
3.2 MORE DERIVATIVES  
# 1, 3, 13, 27, 29, 37, 45, 47, 49

11 FEB 3.3 RULES TO FIND DERIVS FASTER  
# 1, 7, 13, 17, 21, 29, 33, 41a, 41c

13 FEB 3.4 DERIV AS RATE-OF-CHANGE  
# 3, 13, 15, 25

3.5 DERIVS OF SINE & COSINE # 1, 3, 5, 35

3.6 CHAIN RULE # 1, 3, 9, 17, 25, 85

18 FEB 3.7 IMPLICIT DIFF # 1, 5, 19, 32, 44

20 FEB 3.8 CONTIN & MORE RELATED RATES  
# 25, 27, 33, 40

3.8 APPLICATIONS OF DERIV:  
RELATED RATE PROBS # 1, 3, 13

25 FEB  
RVW

27 FEB  
TEST # 2 DERIVATIVES

4 MAR 3.9 LINEARIZATION. DIFFERENTIALS.  
# 1, 17, 29, 35, 37, 41, 45, 47, 49

6 MAR 4.1 HOW TO FIND EXTREMA OF  $f(x)$   
# 1, 3, 5, 21, 27, 45, 69  
4.2 MEAN VALUE THEOREM # 49, 50

11 MAR  
SPRING

13 MAR  
BREAK

18 MAR 4.3 IS  $f(x)$  INCR OR DECR? - 1<sup>ST</sup> DERIV TEST  
# 1, 3, 9, 41, 43

20 MAR 4.5 OPTIMIZATION PROBS  
# 1, 2, 3, 7, 9, 13

4.4 CONCAVITY OF CURVES # 1, 7, 9

25 MAR 4.6 SOLVE EQ<sup>2</sup> NUMERICALLY # 1

27 MAR  
RVW

3.9 DIFFERENTIALS REVISITED # 38, 44

1 APR  
TEST # 3 EXTREMA,  
DIFFERENTIALS

3 APR ANTI DERIVS. SOLVING DIFF<sup>2</sup> EQ<sup>2</sup>s.  
4.7 # 1, 3, 17, 19, 21, 35, 71, 83, 102, 106.

8 APR 5.2 SIGMA NOTATION # 1, 3, 5, 11, 13, 15, 17  
RIEMANN SUM:  
5.1 APPX AREA UNDER CURVE w/ RECTANGLES # 6

10 APR 5.3 INTEGRAL # 1, 29, 35, 41, 51, 55  
5.4 FUND. THM. OF CALCULUS  
# 1, 13, 27, 33, 39, 47, 51

15 APR TUFFER ANTIDERIVS: UDU SUBSTIT.  
5.5 # 1, 3, 17, 19, 21, 25, 29, 55

17 APR 5.6 CHANGE LIMITS IN UDU SUBSTIT.  
AREA BETWEEN TWO CURVES.  
# 5, 9, 12, 25, 27, 41, 43

22 APR  
RVW

24 APR  
TEST # 4 ANTIDERIVS  
INTEGRALS.

29 APR  
RVW FOR FINAL

1 MAY  
RVW FOR FINAL

6 MAY

8 MAY  
FINAL EXAM 4-6p