

Math 106 Integral calculus

Syllabus

- **Instructor:** Dr. Shayea Aldossari.
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- **Texts:** Calculus by Swokowski, Olinick, Pence (Sixth Edition)
- **Coures Contents: Sections, Topics, Exercises**
 - 4.1. Antiderivatives and indefinite integrals: 1, 5, 7, 11, 14, 15, 17, 23, 27, 29, 35, 41, 43, 49
 - 4.2. Change of variables in indefinite integrals: 1, 3, 5, 7, 9, 16, 20, 21, 27, 32, 37
 - 4.3. Summation notation and area: 1, 2, 3, 5, 6, 9, 12, 27, 37
 - 4.4. The definite integral: 1, 5, 10, 11, 15, 16, 19, 20, 31, 33, 37
 - 4.5. Properties of definite integral: 7, 10, 11, 15, 17, 22, 23, 25, 29, 34
 - 4.6. The fundamental theorem of calculus 1, 7, 8, 9, 11, 12, 13, 15, 17, 21, 29, 32, 36, 45, 47
 - 4.7. Numerical integration: 15, 16, 17, 18, 33, 34
 - 6.2 The natural logarithm function: 3, 5, 9, 11, 32, 35, 39, 41, 42
 - 6.3. The exponential function: 1, 3, 6, 11, 15, 31, 33
 - 6.4. Integration using natural logarithm and exponential function: 1, 3, 6, 11, 15, 18, 19, 30, 3
 - 6.5. General exponential function and logarithm function: 1, 5, 15, 17, 23, 29, 37, 39, 41, 4
 - 6.7. Inverse trigonometric functions: 31, 33, 37, 43, 51, 52, 56, 57, 60, 61, 62
 - 6.8. Hyperbolic and inverse hyperbolic functions: 19, 20, 21, 28, 29, 61, 63, 65, 67, 73, 74, 75, 79, 80
 - 6.9. Indeterminate forms and L'Hopital's rule: 49, 51, 57, 58, 59, 64, 65, 74, 76
 - 7.1. Integration by parts: 1, 2, 7, 11, 12, 13, 16, 17, 31
 - 7.2. Trigonometric integrals: 1, 3, 4, 5, 7, 9, 11, 13, 15
 - 7.3. Trigonometric substitutions: 1, 3, 5, 7, 9, 10, 21, 22
 - 7.4. Integrals of rational functions (Partial fractions): 1, 2, 5, 6, 9, 11, 25
 - 7.5. Quadratic expressions and miscellaneous substitutions: 1, 3, 5, 6, 10, 12, 25, 26, 27, 28, 32, 47, 48, 49, 50
 - 7.7. Improper integrals : 1, 2, 4, 7, 13, 14, 15, 17
 - 5.1. Area between curves: 5, 6, 9, 10, 11, 12, 14, 27, 28, 31

- 5.2. Volume (by disk or washer method):5, 6, 8, 9, 21, 25
- 5.3. Volume (by Cylindrical shells method):5, 6, 7, 11, 13, 15, 17, 19, 21
- 5.5. Arc length and surface of revolution: 5, 7, 11, 12, 13, 29, 30, 32, 35, 36, 42
- 9.1. Parametric equations: 1, 3, 5, 7, 25
- 9.2. Arc length and surface area: 1, 5, 7, 9, 21, 29, 31, 33, 35, 37
- 9.3. Polar coordinates:1, 2, 3, 5, 7, 9, 27, 31, 33, 37, 38, 51, 53, 59
- 9.4. Integrals in polar coordinates:1, 3, 18, 19, 22, 23, 27, 30, 35, 37

- **Attendance Policy:** Students are expected to attend every class, to arrive on time, and to participate in all class activities. You are responsible for material covered if you are absent. If you miss 25% of the class meetings, your grade will be DN (Denied).

- **Exams and Grading Policy:**

- First Midterm: 25 points.
- Second Midterm: 25 points.
- Final Exam: 40 points. In Class on Monday 16/5/1443 (20/12/2021).
- 10 points for the TA.

Final grade will be calculated in the following way: $100 - 95 = A+$, $> 95 - 90 = A$, $> 90 - 85 = B+$, $> 85 - 80 = B$, $> 80 - 75 = C+$, $> 75 - 70 = C$, $> 70 - 65 = D+$, $> 65 - 60 = D$, and $> 60 = F$.