Date	Fall 2015-2016	Credits	4
Course Title	Mathematics I	Course	MATH 113
		Number	
Pre-requisite	None	Co-requisite	None
(s)		(s)	
Hours	75	Out of Class	150
		Work Hours	

Place and Time of Class Meeting

TO BE FILLED OUT BY THE INSTRUCTOR / ÖĞRETİM ELEMANI TARAFINDAN DOLDURULACAK.

Name and Contact Information of Instructor

TO BE FILLED OUT BY THE INSTRUCTOR / ÖĞRETİM ELEMANI TARAFINDAN DOLDURULACAK.

Book required

(The School recognizes the use of the textbook in the classroom as part of the educational methodology and strategy applied in diverse materials. The textbook is part of the curriculum and is used to reach the student in an effective manner in the classroom. Every student is expected to acquire and use the textbook.)

Thomas' Calculus, 13th Edition in SI Units George B. Thomas, Maurice D. Weir, Joel R. Hass Pearson Education Inc.

Classroom expectations for students

Attendance Policy

Students are liable to attend every course, practical and laboratory work of the program they are enrolled and to take the exams and participate in academic work required for achieving the course. Student attendance to all courses is compulsory. Students who do not attend a minimum 70% of the theoretical courses and 80% of the practical courses will be considered as absent for the related courses. Students who do not meet the mandatory minimum requirement of attendance will fail the course. Students who fail a course for not fulfilling minimum attendance requirement are obliged to meet the attendance requirement when they re-take the course.

Student Tardiness Policy

Students are permitted to arrive to the class in the first 15 minutes after the scheduled start of the course; extension of tardiness time is in instructor's discretion.

Course Description (must correspond exactly to Catalog description)

This course will investigate limits, rules of limits, continuity, derivatives, differentiation rules, chain rule, implicit differentiation, maximum-minimum problems, curve sketching, applied optimization problems, integration, Riemann sums, definite integrals, area between curves, volumes of revolution, transcendental functions.

Learning Objectives

At the end of this course the student will be able to:

- Calculate limits by substitution and by eliminating zero denominators.
- Calculate limits of rational functions at infinity.
- Determine continuity behavior of a function at a certain point.
- Obtain limits involving infinity and find asymptotes of a function.
- Apply the basic rules of differentiation and use them to find derivatives of products and quotients.
- Define derivatives of polynomials, trigonometric, exponential, hyperbolic, logarithmic and inverse trigonometric functions.
- Apply the chain rule to find derivatives of composite functions.
- Sketch graphs of rational functions including finding asymptotes, tangents and normals to graphs of functions given in explicit, implicit and parametric forms
- Define standard indefinite integrals and basic rules of indefinite integration.
- Evaluate integrals by substitution with and without suitable hints.
- Evaluate integrals of rational functions by partial fractions and repeated use of integration by parts.
- Formulate the concept of definite integral and its basic properties.
- Write the expression of the fundamental theorem of calculus and apply it for evaluating definite integrals and derivatives of integrals with variable limits of integration
- Find area between curves, volumes and surface areas of solids of revolution, and arc length.

Topical Outline and Schedule

DATE	WEEK 1
SPECIFIC	• Describe the course.
OBJECTIVES	• Explain the areas the calculus is needed.
	• Define dependent and independent variables, function, domain, and
	range.
	• Graph the easy functions
	• Define increasing/decreasing and even/odd functions.
	• Calculate the result of the operations of functions.
	• Shift, scale and reflect a graph of a function.
	• Explain trigonometric functions and their properties.
TOPIC (S)	• Svllabus.
× /	• 1.1 Functions and Their Graphs
	• 1.2 Combining Functions: Shifting and Scaling Graphs
	• 1.3 Trigonometric Functions
LEARNING	Discussion of Svllabus.
ACTIVITIES	Discuss the effect of the functions' behavior on their graphs.
	Obtain the trigonometric identities step by step by discussion.
	Completion of exercises and problems.
OUT OF	Review the Syllabus.
CLASS	Homework: Read Chapter 1, and sections 2.1,.2.2, 2.3 and be prepared to
WORK	discuss in class.
ASSIGNMENT	MathXL (This course is based on Thomas' Calculus Global Edition, 12e Copyright
	2015 Pearson Education)
DATE	WEEK 2
SPECIFIC	• Define average rate of the change secant line tangent line and slope
OBJECTIVES	of a curve.
	• Solve related examples.
	• Explain and exemplify the limit laws
	• Eliminate zero dominators algebraically to calculate the limit.
	• Explain the sandwich theorem.
	• Write precise definition of the limit by the aim of the students.
	• Find deltas algebraically for given epsilons.
	• Explain how to find a delta for a given function. L. x and epsilon.
	• Use the precise definition of the limit to prove the limit laws.
TOPIC (S)	2 Limits and Continuity
	• 2.1 Rates of Change and Tangents to Curves
	• 2.2 Limit of a Function and Limit Laws
	• 2.3 The Precise Definition of a Limit
LEARNING	Illustrate the limit of a function at a certain point by using its graph and
ACTIVITIES	comparing values of the function at the neighborhood of the point.
	Discuss how to find limit of a function if the function has zero dominator.
	Completion of exercises and problems.

OUT OF	Homework: Read Chapter 2 and be prepared to discuss in class.
CLASS	MathXL (This course is based on Thomas' Calculus Global Edition, 12e Copyright
WORK	2015 Pearson Education)
ASSIGNMENT	Doing Homework I
DATE	WEEK 3
SPECIFIC	• Define one-sided limits and explain related theorems
OBJECTIVES	 Illustrate continuity behavior of a function at a point
	 Explain continuity test and discontinuity types by using several
	• Explain continuity test and discontinuity types by using several
	• Illustrate the properties of the continuous functions
	 Industrate the properties of the continuous functions. Ensurelify the continuous entension of a function to a point.
	• Exemplify the continuous extension of a function to a point.
	• Explain the intermediate value theorem for continuous functions.
	• Explain limit of a function at infinity (+/-) and related theorems.
	 Define and illustrate asymptotes.
	• Explain precise definition of infinite limits and related examples.
TOPIC (S)	• 2.4 One-Sided Limits
	• 2.5 Continuity
	• 2.6 Limits Involving Infinity; Asymptotes of Graphs.
LEARNING	Discuss under which circumstance the function be discontinuous at a point.
ACTIVITIES	Make the students inference to define the discontinuity types.
	Graph a function to illustrate the intermediate value theorem.
	Graph a function to illustrate the relationship between the function and its the
	asymptotes.
	Completion of exercises and problems.
OUT OF	Homework : Read Chapter 2 and section 3.1, 3.2, 3.3 and be prepared to
CLASS	discuss in class.
WORK	MathXL (This course is based on Thomas' Calculus Global Edition, 12e Copyright
ASSIGNMENT	2015 Pearson Education)
	Doing Homework II
DATE	WEEK 4
SPECIFIC	• Define the derivative of a function.
OBJECTIVES	• Calculate the derivatives of the rational functions from the definition.
	• Exemplify the one-sided derivative.
	• Prove the differentiation rules.
TOPIC (S)	3 Differentiation
	• 3.1 Tangents and the Derivative at a Point
	• 3.2 The Derivative as a Function
	• 3 3 Differentiation Rules
LEARNING	Discuss the relationship between related changes and derivative
ACTIVITIES	Write a summary on the relation between limit of the difference quotient.
	slope, rate of change and derivative.
	Completion of exercises and problems
OUT OF	Homework: Read sections 3.4, 3.5, 3.6, and be prepared to discuss in class
CLASS	MathXL (This course is based on Thomas' Calculus Global Edition. 12e Copyright
WORK	2015 Pearson Education)
WOMX	Doing Homework II

ASSIGNMENT	
DATE	WEEK 5
SPECIFIC	• Define the instantaneous rate of change.
OBJECTIVES	• Explain motion along a line.
	• Mention the applications of the derivative in economics.
	• Define the derivatives of the trigonometric functions and solve some
	examples.
	• Explain the chain rule and solve some examples about repeated use of
	it.
TOPIC (S)	• 3.4 The Derivative as a Rate of Change
	• 3.5 Derivatives of Trigonometric Functions
	• 3.6 The Chain Rule
LEARNING	Discuss how to find velocity by using position function.
ACTIVITIES	Discuss how to find acceleration by the aim of the velocity function.
	Discuss the relationship between jerk and acceleration.
	Let the students obtain the derivative of the tangent function by using the
	derivatives of the sine and cosine functions.
	Completion of exercises and problems.
OUT OF	Homework: Read sections 3.7, 3.8, 3.9, and be prepared to discuss in class.
CLASS	MathXL (This course is based on Thomas' Calculus Global Edition, 12e Copyright
WORK	2015 Pearson Education)
ASSIGNMENT	Doing Homework II
DATE	WEEK 6
SPECIFIC	• MIDTERM EXAM I
SPECIFIC OBJECTIVES	 MIDTERM EXAM I Explain how to calculate the derivative of an implicitly defined
SPECIFIC OBJECTIVES	 MIDTERM EXAM I Explain how to calculate the derivative of an implicitly defined function.
SPECIFIC OBJECTIVES	 MIDTERM EXAM I Explain how to calculate the derivative of an implicitly defined function. Calculate the derivatives of higher order.
SPECIFIC OBJECTIVES	 MIDTERM EXAM I Explain how to calculate the derivative of an implicitly defined function. Calculate the derivatives of higher order. Solve problems about related rates.
SPECIFIC OBJECTIVES	 MIDTERM EXAM I Explain how to calculate the derivative of an implicitly defined function. Calculate the derivatives of higher order. Solve problems about related rates. Define linearization and differential of a function.
SPECIFIC OBJECTIVES	 MIDTERM EXAM I Explain how to calculate the derivative of an implicitly defined function. Calculate the derivatives of higher order. Solve problems about related rates. Define linearization and differential of a function. Compute the estimation of an unknown by using differentials.
SPECIFIC OBJECTIVES	 MIDTERM EXAM I Explain how to calculate the derivative of an implicitly defined function. Calculate the derivatives of higher order. Solve problems about related rates. Define linearization and differential of a function. Compute the estimation of an unknown by using differentials. Find the error in differential approximation.
SPECIFIC OBJECTIVES TOPIC (S)	 MIDTERM EXAM I Explain how to calculate the derivative of an implicitly defined function. Calculate the derivatives of higher order. Solve problems about related rates. Define linearization and differential of a function. Compute the estimation of an unknown by using differentials. Find the error in differential approximation. 3.7 Implicit Differentiaton
SPECIFIC OBJECTIVES TOPIC (S)	 MIDTERM EXAM I Explain how to calculate the derivative of an implicitly defined function. Calculate the derivatives of higher order. Solve problems about related rates. Define linearization and differential of a function. Compute the estimation of an unknown by using differentials. Find the error in differential approximation. 3.7 Implicit Differentiaton 3.8 Related Rates
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SPECIFIC OBJECTIVES TOPIC (S) LEARNING ACTIVITIES OUT OF CLASS	 MIDTERM EXAM I Explain how to calculate the derivative of an implicitly defined function. Calculate the derivatives of higher order. Solve problems about related rates. Define linearization and differential of a function. Compute the estimation of an unknown by using differentials. Find the error in differential approximation. 3.7 Implicit Differentiaton 3.8 Related Rates 3.9 Linearization and Differentials Rearrange the formulas of the tangent line and the normal line for implicitly defined functions. Construct the differential equations of the problems step by step by the aim of the students. Completion of exercises and problems. Homework: Read Chapter 4 and be prepared to discuss in class. MathXL (This course is based on Thomas' Calculus Global Edition, 12e Copyright 2015 Paarcon Education)
SPECIFIC OBJECTIVES TOPIC (S) LEARNING ACTIVITIES OUT OF CLASS WORK	 MIDTERM EXAM I Explain how to calculate the derivative of an implicitly defined function. Calculate the derivatives of higher order. Solve problems about related rates. Define linearization and differential of a function. Compute the estimation of an unknown by using differentials. Find the error in differential approximation. 3.7 Implicit Differentiaton 3.8 Related Rates 3.9 Linearization and Differentials Rearrange the formulas of the tangent line and the normal line for implicitly defined functions. Construct the differential equations of the problems step by step by the aim of the students. Completion of exercises and problems. Homework: Read Chapter 4 and be prepared to discuss in class. MathXL (This course is based on Thomas' Calculus Global Edition, 12e Copyright 2015 Pearson Education)
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OBJECTIVES	• Explain the related theorems
	 Define increasing and decreasing functions.
	Explain the first derivative test for local extrema
TOPIC (S)	4 Applications of Derivatives
	4.1 Extreme Values of Functions
	4.2. The Mean Value Theorem
	4.3 Monotonic Functions and the First Derivative Test
LEARNING	Discuss how to find the absolute extrema of a continuous function on a finite
ACTIVITIES	closed interval.
	Discuss how to determine the monotonic behavior of the function by using
	derivative.
	Completion of exercises and problems.
OUT OF	Homework: Read sections 4.4, 4.5, 4.7 and be prepared to discuss in class.
CLASS	MathXL (This course is based on Thomas' Calculus Global Edition, 12e Copyright
WORK	2015 Pearson Education)
ASSIGNMENT	Doing Homework III
DATE	WEEK 8
SPECIFIC	• Define the concavity and explain second derivative test.
OBJECTIVES	• Define the points of inflection and solve some examples.
	• Explain the second derivative test for local extrema.
	• Explain the steps for sketching the graph of a function.
	• Solve applied optimization problems.
	• Explain antiderivative of a function and the related theorems.
	• Define indefinite integral and the related terms.
TOPIC (S)	4.4 Concavity and Curve Sketching
	4.5 Applied Optimization
	4.7 Antiderivatives
LEARNING	Discuss how to determine concavity of the function on an interval.
ACTIVITIES	Help the students to plot the inflection points on the graph by themselves.
	Construct the objective function of the problem by the aim of the students.
	Discuss the relationship between antiderivative and the integral.
	Completion of exercises and problems.
OUT OF	Homework: Read Chapter 5
CLASS	MathAL (This course is based on Thomas' Calculus Global Edition, 12e Copyright
WORK	Doing Homework IV
ASSIGNMENT	
DATE	WEEK 9
SPECIFIC ODJECTIVES	
TODIC (S)	
I FADNINC	
ACTIVITIES	
OUT OF	
CLASS	
WORK	

ASSIGNMENT	
DATE	WEEK 10
SPECIFIC	• Estimate the area of a region by using lower sums, midpoint rule and
OBJECTIVES	upper sums.
	• Explain the finite sums, and denote its notation.
	• Explain some properties of the finite sums.
	• Calculate the limits of the finite sums as n goes to infinity.
	• Define definite integral of a function over a closed interval and
	explain related theorems.
	 Mention the properties of the definite integrals.
	• Calculate the area under the graph of a nonnegative function.
	• Calculate the average value of a continuous function.
TOPIC (S)	5 Integration
	5.1 Area and Estimating with Finite Sums
	5.2 Sigma Notation and Limits of Finite Sums
	5.3 The Definite Integral
LEARNING	Discuss how to compute the sum.
ACTIVITIES	Completion of exercises and problems.
OUT OF	Homework: Read section 5.4, 5.5, 5.6 and be prepared to discuss in the
CLASS	Class. MathXL (This course is based on Thomas' Calculus Global Edition, 12e Convright
WORK	2015 Pearson Education)
ASSIGNMENT	Doing Homework V
DATE	WEEK 11
DAIL	
SPECIFIC	• Explain the mean value theorem for definite integrals, fundamental
SPECIFIC OBJECTIVES	• Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem.
SPECIFIC OBJECTIVES	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation.
SPECIFIC OBJECTIVES	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation. Calculate the total area of a region.
SPECIFIC OBJECTIVES	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation. Calculate the total area of a region. Explain how to calculate the definite integrals by using substitution
SPECIFIC OBJECTIVES	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation. Calculate the total area of a region. Explain how to calculate the definite integrals by using substitution method.
SPECIFIC OBJECTIVES	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation. Calculate the total area of a region. Explain how to calculate the definite integrals by using substitution method. Explain the substitution method in definite integrals.
SPECIFIC OBJECTIVES	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation. Calculate the total area of a region. Explain how to calculate the definite integrals by using substitution method. Explain the substitution method in definite integrals. Explain the definite integral of the even and od functions on the
SPECIFIC OBJECTIVES	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation. Calculate the total area of a region. Explain how to calculate the definite integrals by using substitution method. Explain the substitution method in definite integrals. Explain the definite integral of the even and od functions on the symmetric interval.
SPECIFIC OBJECTIVES	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation. Calculate the total area of a region. Explain how to calculate the definite integrals by using substitution method. Explain the substitution method in definite integrals. Explain the definite integral of the even and od functions on the symmetric interval. Explain calculating the areas between curves.
SPECIFIC OBJECTIVES TOPIC (S)	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation. Calculate the total area of a region. Explain how to calculate the definite integrals by using substitution method. Explain the substitution method in definite integrals. Explain the definite integral of the even and od functions on the symmetric interval. Explain calculating the areas between curves.
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SPECIFIC OBJECTIVES TOPIC (S)	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation. Calculate the total area of a region. Explain how to calculate the definite integrals by using substitution method. Explain the substitution method in definite integrals. Explain the definite integral of the even and od functions on the symmetric interval. Explain calculating the areas between curves. 5.4 The Fundamental Theorem of Calculus 5.5 Indefinite Integrals and the Substitution Method 5.6 Substitution and Area Between Curves
SPECIFIC OBJECTIVES TOPIC (S)	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation. Calculate the total area of a region. Explain how to calculate the definite integrals by using substitution method. Explain the substitution method in definite integrals. Explain the definite integral of the even and od functions on the symmetric interval. Explain calculating the areas between curves. 5.4 The Fundamental Theorem of Calculus 5.5 Indefinite Integrals and the Substitution Method 5.6 Substitution and Area Between Curves Discuss how to calculate the area of a region bounded by a negative function.
SPECIFIC OBJECTIVES TOPIC (S) LEARNING ACTIVITIES	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation. Calculate the total area of a region. Explain how to calculate the definite integrals by using substitution method. Explain the substitution method in definite integrals. Explain the definite integral of the even and od functions on the symmetric interval. Explain calculating the areas between curves. 5.4 The Fundamental Theorem of Calculus 5.5 Indefinite Integrals and the Substitution Method 5.6 Substitution and Area Between Curves Discuss how to calculate the area of a region bounded by a negative function. Discuss how to use substitution method in definite integrals.
SPECIFIC OBJECTIVES TOPIC (S) LEARNING ACTIVITIES	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation. Calculate the total area of a region. Explain how to calculate the definite integrals by using substitution method. Explain the substitution method in definite integrals. Explain the definite integral of the even and od functions on the symmetric interval. Explain calculating the areas between curves. 5.4 The Fundamental Theorem of Calculus 5.5 Indefinite Integrals and the Substitution Method 5.6 Substitution and Area Between Curves Discuss how to calculate the area of a region bounded by a negative function. Discuss the simplicity of the calculating integral of an even/odd function.
SPECIFIC OBJECTIVES TOPIC (S) LEARNING ACTIVITIES	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation. Calculate the total area of a region. Explain how to calculate the definite integrals by using substitution method. Explain the substitution method in definite integrals. Explain the definite integral of the even and od functions on the symmetric interval. Explain calculating the areas between curves. 5.4 The Fundamental Theorem of Calculus 5.5 Indefinite Integrals and the Substitution Method 5.6 Substitution and Area Between Curves Discuss how to calculate the area of a region bounded by a negative function. Discuss the simplicity of the calculating integral of an even/odd function.
SPECIFIC OBJECTIVES TOPIC (S) LEARNING ACTIVITIES OUT OF	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation. Calculate the total area of a region. Explain how to calculate the definite integrals by using substitution method. Explain the substitution method in definite integrals. Explain the definite integral of the even and od functions on the symmetric interval. Explain calculating the areas between curves. 5.4 The Fundamental Theorem of Calculus 5.5 Indefinite Integrals and the Substitution Method 5.6 Substitution and Area Between Curves Discuss how to calculate the area of a region bounded by a negative function. Discuss the simplicity of the calculating integral of an even/odd function. Completion of exercises and problems.
SPECIFIC OBJECTIVES TOPIC (S) LEARNING ACTIVITIES OUT OF CLASS WOPK	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation. Calculate the total area of a region. Explain how to calculate the definite integrals by using substitution method. Explain the substitution method in definite integrals. Explain the definite integral of the even and od functions on the symmetric interval. Explain calculating the areas between curves. 5.4 The Fundamental Theorem of Calculus 5.5 Indefinite Integrals and the Substitution Method 5.6 Substitution and Area Between Curves Discuss how to calculate the area of a region bounded by a negative function. Discuss the simplicity of the calculating integral of an even/odd function. Completion of exercises and problems. Homework: Read Chapter 6 MathXL (This course is based on Thomas' Calculus Global Edition, 12e Copyright 2015 Pearson Education)
SPECIFIC OBJECTIVES TOPIC (S) LEARNING ACTIVITIES OUT OF CLASS WORK ASSIGNMENT	 Explain the mean value theorem for definite integrals, fundamental theorem of calculus, and net change theorem. Explain the relationship between integration and differentiation. Calculate the total area of a region. Explain how to calculate the definite integrals by using substitution method. Explain the substitution method in definite integrals. Explain the definite integral of the even and od functions on the symmetric interval. Explain calculating the areas between curves. 5.4 The Fundamental Theorem of Calculus 5.5 Indefinite Integrals and the Substitution Method 5.6 Substitution and Area Between Curves Discuss how to calculate the area of a region bounded by a negative function. Discuss the simplicity of the calculating integral of an even/odd function. Completion of exercises and problems. Homework: Read Chapter 6 MathXL (This course is based on Thomas' Calculus Global Edition, 12e Copyright 2015 Pearson Education) Doing Homework VI

FEA – GENERAL EDUCATION

SPECIFIC	MIDTERM EXAM II
OBJECTIVES	• Calculate the volume by using cross-sections.
	• Calculate the volume of a solid of revolution by using disc method.
	• Calculate the volume of a solid of revolution by using washer method.
	• Calculate the volume of a solid of revolution by using the shell
	method.
	• Explain the formula of the arc length of a curve and solve some
	examples.
	• Define the area of the surface generated by revolving a curve.
TOPIC (S)	Applications of Definite Integrals
	6.1 Volumes Using Cross-Sections
	6.2 Volumes Using Cylindrical Shells
	6.3 Arc Length
	6.4 Areas of the Surfaces of Revolution
LEARNING	Obtain the formula of the column by discussion.
ACTIVITIES	Find the formula of the volume by using disc method step by step.
	the students
	Write the formula of the volume by using shell method with perceptions of
	the students
	Completion of exercises and problems
OUT OF	Homework [•] Read Chapter 7
CLASS	MathXL (This course is based on Thomas' Calculus Global Edition, 12e Copyright
021200	
WORK	2015 Pearson Education)
WORK ASSIGNMENT	2015 Pearson Education) Doing Homework VI
WORK ASSIGNMENT DATE	2015 Pearson Education) Doing Homework VI WEEK 13
WORK ASSIGNMENT DATE SPECIFIC	2015 Pearson Education) Doing Homework VI WEEK 13 • Define one-to-one and inverse functions.
WORK ASSIGNMENT DATE SPECIFIC OBJECTIVES	 2015 Pearson Education) Doing Homework VI WEEK 13 Define one-to-one and inverse functions. Explain how to calculate the derivatives of the inverse function of a
WORK ASSIGNMENT DATE SPECIFIC OBJECTIVES	 2015 Pearson Education) Doing Homework VI WEEK 13 Define one-to-one and inverse functions. Explain how to calculate the derivatives of the inverse function of a differentiable function.
WORK ASSIGNMENT DATE SPECIFIC OBJECTIVES	 2015 Pearson Education) Doing Homework VI WEEK 13 Define one-to-one and inverse functions. Explain how to calculate the derivatives of the inverse function of a differentiable function. Define the natural logarithm and calculate its derivative by using the fundamental theorem of calculus
WORK ASSIGNMENT DATE SPECIFIC OBJECTIVES	 2015 Pearson Education) Doing Homework VI WEEK 13 Define one-to-one and inverse functions. Explain how to calculate the derivatives of the inverse function of a differentiable function. Define the natural logarithm and calculate its derivative by using the fundamental theorem of calculus. Explain the properties of the logarithms.
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	7.2 Natural Logarithms
	7.3 Exponential Functions
LEARNING	Discuss how to find the inverse of a function.
ACTIVITIES	Discuss the simplicity causing by using logarithms while calculating some
	integrals and derivatives.
	Discuss the relationship between logarithm and exponential functions.
	Completion of exercises and problems.
OUT OF	Homework : Read Chapter 7 and be ready to discuss in class.
CLASS	MathXL (This course is based on Thomas' Calculus Global Edition, 12e Copyright
WORK	2015 Pearson Education)
ASSIGNMENT	
DATE	WEEK 14
SPECIFIC	• Explain indeterminate form 0/0 and L'Hospital's Rule.
OBJECTIVES	• Evaluate the limit of the functions with $0/0$, ∞/∞ , $0.\infty$, and $\infty-\infty$ as
	indeterminate form.
	• Calculate the limit of the functions with indeterminate powers.
	• Explain the Cauchy's Mean Value Theorem.
	• Define the inverse trigonometric functions and explain their
	properties.
	• Obtain derivatives of the inverse trigonometric functions and integrals
	evaluated with inverse trigonometric functions.
	• Define the hyperbolic functions and their inverses.
	• Obtain some identities for hyperbolic functions.
	• Calculate the derivatives and integrals of the hyperbolic functions.
	• Obtain the derivatives of the inverse hyperbolic functions and
	integrals leading to inverse hyperbolic functions.
TOPIC (S)	7.5 Indeterminate Forms and L'Hôpital's Rule
	7.6 Inverse Trigonometric Functions
	7.7 Hyperbolic Functions
LEARNING	Discuss how to express ∞/∞ indeterminate form as $0/0$ indeterminate form.
ACTIVITIES	Evaluate derivatives and integrals of the hyperbolic functions step by step by
	the aim of the students.
	Completion of exercises and problems.
CLASS	MathXI (This course is based on Thomas' Calculus Global Edition, 12e Convright
ULASS WORK	2015 Pearson Education)
WUKK ASSICNMENT	Doing Homework VI
DATE	WFFK 15
SPECIFIC	Final Evam
OBJECTIVES	- Final Ezam.
TOPIC (S)	
LEARNING	
ACTIVITIES	
OUT OF	
CLASS	

WORK	
ASSIGNMENT	

Instructional Methods

In developing methodological strategies, it is best to discuss them between teachers and students in an environment of freedom and mutual agreement in order to ensure that the students make them their own and take responsibility for their execution and for attaining the goals of this course.

The following strategies may be used in this class:

- 1. A review of the literature.
- 2. Analysis of assigned readings.
- 3. Individual and group discussions.
- 4. Preparation of a didactic plan.
- 5. Preparation of lecture notes.

Instructional Materials and References

A Complete Course Calculus, 8th Edition. Robert A. Adams, Christopher Essex Pearson Canada Inc. ISBN 978: 0321781079

Assessment Criteria and Methods of Evaluating Students

Grade	Coefficient
AA	4.00
ВА	3.50
BB	3.00
СВ	2.50
CC	2.00

DC	1.50
DD	1.00
FF	0.00
VF	0.00

Distribution of Grade Elements			
In-Term Studies	Quantity	Percentage	
Midterm I	1	20	
Midterm II	1	20	
Homework	6	20	
Total	8	60	
End-Term Studies	Quantity	Percentage	
Final	Quantity 1	40	
Final Total	Quantity 1 1	40 40	
Final Total Contribution Of In-Term Studies To Overall Grade	Quantity 1 1	Percentage 40 40 60	
End-Term Studies Final Total Contribution Of In-Term Studies To Overall Grade End-Term Studies	Quantity 1 1	Percentage 40 40 60 40	

Date Syllabus Was Last Reviewed: September 10, 2016