

**Math203 syllabus**

Textbook: Book: Calculus Early Transcendental by James Stewart 8th edition

Chapter Title	Section Title	Subtitle	Example	Home Work
<b>Chapter 10</b> <b>Parametric Equations and Polar Coordinates</b>	<b>10.1</b> Curves Defined by parametric Equations <b>Week 1</b>	Parametric Equations	1,3,5 Exc.19	11 - 21 (Odd)
	<b>10.2</b> Calculus with Parametric curves <b>Week 2</b>	Tangents, Areas, Arc Length, Surface Area.	1-6	1,3,5,7,9,10, 41,43,45
	<b>10.3</b> Polar Coordinates <b>Week 3</b>	Polar Coordinates, Polar Curves, Symmetry, Tangent to Polar Curves, Graphing Polar Curves with Graphing Devices.	1-9	1,3,5,9,11,15,17,22,24,25
	<b>10.4</b> Areas and Arc Length in Polar Coordinates <b>Week 4</b>	Areas , Arc Length	1,4(r=sinQ)	1,2,17,19,45,47
	<b>10.5</b> Conic Sections <b>Week 4</b>	Parabola, Ellipse, Hyperbola, Shifted conics	1-7	1-7 (Odd) 11-15 (Odd) 31-47 (Odd)
	<b>10.6</b> Conic Sections in Polar Coordinates. <b>Week 5</b>	Conic Sections in Polar Coordinates	1,2,3	1-15(Odd)
	<b>Chapter 12</b> <b>Vectors and Geometry of Space</b>	<b>12.1</b> Three Dimensional Coordinate Systems <b>Week 5</b>	Distance Formula in Space, Equation of Sphere.	1,2,4,6
<b>12.2</b> Vectors <b>Week 6</b>		Combining Vectors, Vector Algebra Operations, Components, Unit Vectors.	1-6	9, 11,17,21,25
<b>12.3</b> The Dot Product <b>Week 6</b>		Definition and Properties of the Dot Product, Angle Between Vectors,	1-6	1-9 (Odd) 15-19 (Odd) 35,37,38,41

		Direction Angles and Direction Cosines, Projections.		
	<b>12.4</b> The Cross Product <b>Week 7</b>	Definition and Properties of the Cross Product, Triple Products.	1-5	1,3,29,35
	<b>12.5</b> Equations of Lines and Planes <b>Week7</b>	Parametric Equations of Line, Planes.	1,2,4-7,9	3,5,20-22 23-27 (Odd) 30,31,43,45,71
	<b>12.6</b> Cylinders and Quadric Surfaces <b>Week 8</b>	Cylinders, Quadric surfaces. (Table 1)	1-4,6	15,19,21-28,33,35,43
<b>Chapter 13</b> <b>Vectors Functions</b>	13.1 Vector Functions and Space Curves <b>Week 8</b>	Limit and Continuity	1,2,4	1,3,6,15
	13.2 Derivatives and Integrals of Vector Functions. <b>Week 9</b>	Derivatives, Unit Tangent Vector, Integrals.	1,4,5	9,18,24,33,34,35
	13.3 Arc Length and Curvature <b>Week 9</b>	Length, Curvature, The Normal and Binormal Vectors.	1,3-6	1,5,22,24
	13.4 Motion In Space: Velocity and Acceleration <b>Week 10</b>	Velocity, speed and acceleration.	1-3	5,11,15,39
<b>Chapter 14</b> <b>Partial Derivatives</b>	14.1 Functional of Several Variables <b>Week10</b>	Functions of Two Variables, Domain, Rang, Level Curves, Functions of There or More Variables.	1,4,5,6,8	9,10,12,13,19
	14.2 Limit and Continuity <b>Week 11</b>	Limit, continuity, Functions of Three or More Variables.	1,2,4,5,7,8	5,7,9,12,14,17,18,30,33,37,38
	14.3 Partial Derivatives <b>Week11</b>	Partial Derivatives of a Functions of Two Variables, Functions of More than Two Variables, Higher Derivatives, Laplace's Equation, Wave Equation.	1,3,5-9	16,20,22,34,48,61,65

	<b>14.4</b> <b>Tangent planes and Linear</b> <u>Week 12</u>	<b>Linearization, Total Differential</b>	<b>2,4</b>	<b>11,12</b>
	<b>14.5</b> <b>The Chain Rule</b> <u>Week 12</u>	<b>The Chain Rule, Implicit Differentiation</b>	<b>1,3,5,8,9</b>	<b>2,3,7,8,21</b>
	<b>14.6</b> <b>Directional Derivatives and Gradient Vector</b> <u>Week 13</u>	<b>Directional Derivatives, The Gradient Vector, Functions of Three Variables, Maximizing The Directional Derivatives, Tangent Plane to Level</b>	<b>2-6</b>	<b>5,7,11,21</b>
	<b>14.7</b> <b>Maximum and Minimum</b> <u>Week 14</u>	<b>Local Maximum and Minimum Values, Saddle Point.</b>	<b>1,3, exc 6</b>	<b>1,7,8</b>
	<b>14.8</b> <b>Lagrange Multiplier</b> <u>Week 14</u>	<b>Lagrange Multipliers</b>	<b>2 , exc 4</b>	<b>3,5</b>

Marks distribution :-

	<b>First Exam</b>	<b>Second Exam</b>	<b>Final Exam</b>	<b>HW &amp; QUIZES</b>
<b>Time mark</b>	<b>90 min 25 marks</b>	<b>90 min 25 marks</b>	<b>120 min 40 marks</b>	<b>10</b>
<b>Date</b>	<b>6<sup>th</sup> Week Monday 7 Oct 2019</b>	<b>11th Week Monday 11 Nov 2019</b>		
<b>Curriculum</b>	<b>Chapter 10 &amp; 12.1 &amp;12.2</b>	<b>12.3 &amp;12.4 &amp; 12.5 &amp;12.6 &amp; chapter 13</b>	<b>ALL</b>	