SYLLABI COVERGAE DETAILS

Class No	Date	Time	Topic Covered
01	27.12.22	2.30 - 4.30	Introductory Phyllon Operator To Execute simple operation
02	3.1.23 Lab 1	2.30 - 4.0	1) Plotting a line joining (1,2), (2,1), (3,7) (4,1), (6,5), (7,10), (8,4)
			2) Plotting the cartesian curve $y = e^x$
			3) Plotting sin and cosin curves
			4) Plotting curves, $y = x$, $y = x^2$, $y = x^3$ etc
03	10.1.23 Lab 1	2.30 - 4.30	1) Plot the curate $x^2 + y^2 = 5$
			2) Plot the Stropoid $y^2(a-x) = x^2(a+x)$ $a > 0$.
			3) Plot the Cissoid $y^2(a-x) = x^3$, $a > 0$.
			4) Plot Lemnicate $a^2y^2 = x^2(a^2 - x^2)$.
			5) Plot Folium of De-cartes
			6) Plot the polar curve $r = 5(1+\cos\theta)$
			7) " " " " $r = 2\lvert\cos 2x\rvert$
			8) " " $r = a + a\cos\theta$; $r = a - a\cos\theta$
04	24.1.23	2.30 - 4.30	1) Conditioning in Phyllon in Phyllon, if statement, if else statement, Nested if statement, if - elif Ladder
			2) To check if number is positive or negative
			3) if elif ladder to check % of marks of student
			4) Number divisible by 7
			5) Multiplication table using loops
			6) Plot polar curves.

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05	31.1.23 Lab 2	2.30-3.30	1) Find the angle between the curves $r=4(1+\cos t)$ and $r=5(1-\cos t)$
			2) Find the angle between the curves $r=4\cos t$ and $r=5\sin t$
			3). Find the radius of curvature for $r=a\sin(nt)$ at $\pi/2$ and $n=1$. (Polar)
			4) Find the radius of curvature of $x=a\cos(t)$, $y=a\sin(t)$
	31.1.23 Lab 3		1) Prove that mixed partial derivatives, $U_{xy}=U_{yx}$, for $\exp(x)(x\cos(y)-y\sin(y))$
			2) Prove that $U_{xx}+U_{yy}=0$ for $U=e^x(x\cos(y)-y\sin(y))$.
			3) If $u=\frac{xy}{z}$, $v=\frac{yz}{x}$, $w=\frac{zx}{y}$ then prove that $J=2$.
			4) If $u=x+3y^2-z^3$, $v=4x^2yz$, $w=2z^2-xy$ then prove that at $(1,-1,0)$, $J=20$
06	7/2/23	2.30-4.30	(1) Find the maxima and minima of $f(x,y)=x^2+y^2+3x-3y+4$.
			(2) Expand $\sin(x)$ as Taylor's series about $x=\pi/2$ upto 3rd degree term. Also $\sin(100^\circ)$.
			(3) Find the Maclaurin's series expansion of $\sin(x)+\cos(x)$ upto 3rd degree term. Calculate $\sin(10)+\cos(10)$.
			(4) L'Hospital rule..
			(a) Evaluate $\lim_{x\to 0}\frac{\sin(x)}{x}$
			(b) Evaluate $\lim_{x\to 1}\frac{(5x^4-4x^2-1)}{(10x-x-9x^3)}$
			(c) Evaluate $\lim_{x\to\infty}\left(1+\frac{1}{x}\right)^x=e$.
07	21/2/23	2.30-4p.m.	Solution of First order O.E and plotting curves
			(1) Solve $\frac{dy}{dx}+y\tan x-y^3\sec x=0$
			(2) Solve $x^3\frac{dy}{dx}-x^2y+y^4\cos x=0$
			(3) Solve $\frac{dy}{dt}=-ky$ with parameter $k=0.3$ and $y(0)=5$.
			(4) The temperature of a body drops from 100°C to 75°C in 10 min. where the surrounding air is at the temp. 20°C.

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			what will be the temperature of the body after half an hour? Plot the graph of cooling.
08	21/2/23	2p.m-4	Numerical Solution of System of equations, test for consistency and graphical representation of the Solution
			(1). Check whether the following system of homoge. linear equation has non-trivial Solution. $x_1+2x_2-x_3=0$, $2x_1+x_2+4x_3=0$; $3x_1+3x_2+4x_3=0$.
			(2) Check whether the following system of hom. linear equ^n has non-trivial Solution $x_1+2x_2-x_3=0$; $2x_1+x_2+4x_3=0$ $x_1-x_2+5x_3=0$
09.	1.123	2pm-4	