LESSON PLAN

Discipline: **Mechanical Engineering**	Semester: **1st semester**	Name of the Teaching Faculty : **Deepak Kumar Sahoo Sadashiba Mohanta**
Subject: **Engineering Mathematics-I** Sub code: **Th-3**	No of days /week class allotted:**04/week**	Semester from Date:**16/08/2024 to 24/12/2024** No of weeks:**21**

Month	Week	No of periods available	Theory topics to be covered
August	1st	01 P	**Trigonometry:-**Concept of angles, Addition formulae
	2nd	04 P	Measurement of angles in degrees, grades and radians and their conversion. T-ratios of Allied angles(without proof)
	3rd	04 P	T-ratios of Allied angles ,sum, difference formulae and their application. product formulae (Transformation of product to sum , difference and vice versa).
September	4th	04 P	T-ratios of multiple angles ,sub multiple angles.(sin 2A,cos2A,tan2A,sin3A,cos3A, $\sin\frac{A}{2}$ $\cos\frac{A}{2}$ $\tan\frac{A}{2}$)
	5th	04 P	Graphs of $\sin x$, $\cos x$, $\tan x$, *and* e^x. Solve Example and problems .
	6th	04 P	**Differential calculus :-**Definition of function . Concept of limits. Four standard limits $\lim_{x\to a}\frac{x^n-a^n}{x-a}$, $\lim_{x\to 0}\frac{\sin x}{x}$, $\lim_{x\to a}\left(\frac{a^x-1}{x}\right)$, $\lim_{x\to a}(1+x)^{\frac{1}{x}}$, differentiation by definition of $x^n, \sin x, \cos x, \tan x, x^n, \log x$.
	7th	04 P	Monthly Test-01 Differentiation of sum ,product and quotient of functions. Differentiation of function of a function . differentiation of trigonometric and inverse trigonometric function .
October	8th	04 P	Differentiation of logarithmic and exponential function. Solve all example and problems.
	9th		PUJA HOLIDAYS
	10th	04 P	**Complex number:-** Definition , real and imaginary part of complex number . **INTERNAL ASSESSMENT-01**
	11th	04 P	Polar and Cartesian representation of complex number and its conversion from one form to other, conjugate of a complex number. Modulus and amplitude of a complex number . addition and subtraction of a complex number .
	12th	01 P	Monthly Test-02

November	13th	01 P	Multiplication and division of a complex number . De- movier's theorm its application.
	14th	04 P	Solve example and problems of complex number. **Partial fraction:-** Definition of polynomial fraction proper and improper fractions and definition of partial fractions. To resolve proper fraction into partial fraction with denominator containing non repeated linear factor.
	15th	01 P	Repeated linear factors and irreducible non repeated quadratic factors. To resolve improper fraction into partial fraction .
	16th	04 P	Solve Example and problems. **Permutation and Combination :-** Value of P(n,r) and C(n,r).
	17th	04 P	Monthly Test-03 **Binomial Theorem:-**Binomial theorem for positive integral index(expansion and general form).solve examples.
December	18th	04 P	**INTERNAL ASSESSMENT-02** Binomial theorem for any index (expansion without proof) first and second binomial approximation with applications to engineering problems.
	19th	04 P	Solve examples and problems. Revision all units
	20th	04 P	**Revision &Previous year question & Answer discussion.**
	21st	01 P	
		VERY SIMILAR TEST/MOCK TEST	

LESSON PLAN

Discipline: **Electrical engineering**	Semester: **1st semester**	Name of the Teaching Faculty : **Deepak Kumar Sahoo Sadashiba Mohanta**
Subject: **Engineering Mathematics-I** Sub code: **Th-3**	No of days /week class allotted:**04/week**	Semester from Date:**16/08/2024 to 24/12/2024** No of weeks:**22**

Month	Week	No of periods available	Theory topics to be covered
August	1st	02 P	**Trigonometry:-**Concept of angles, Addition formulae Measurement of angles in degrees, grades and radians and their conversion. T-ratios of Allied angles(without proof)
	2nd	02 P	T-ratios of Allied angles ,sum, difference formulae and their application. product formulae (Transformation of product to sum , difference and vice versa).
September	4th	04 P	T-ratios of multiple angles ,sub multiple angles.(sin 2A,cos2A,tan2A,sin3A,cos3A, $\sin\frac{A}{2}$ $\cos\frac{A}{2}$ $\tan\frac{A}{2}$)
	5th	04 P	Graphs of $\sin x$, $\cos x$, $\tan x$, $and\ e^x$. Solve Example and problems .
	6th	02 P	**Differential calculus :-**Definition of function . Concept of limits. Four standard limits $\lim_{x\to a}\frac{x^n-a^n}{x-a}$, $\lim_{x\to 0}\frac{\sin x}{x}$, $\lim_{x\to a}\left(\frac{a^x-1}{x}\right)$, $\lim_{x\to a}(1+x)^{\frac{1}{x}}$, differentiation by definition of x^n, $\sin x$, $\cos x$, $\tan x$, x^n, $\log x$.
	7th	04 P	Monthly Test-01 Differentiation of sum ,product and quotient of functions. Differentiation of function of a function . differentiation of trigonometric and inverse trigonometric function .
	8th	02 P	Differentiation of logarithmic and exponential function.
October	9th	02 P	Solve all example and problems.
	10th		PUJA HOLIDAYS
	11th	04 P	**INTERNAL ASSESSMENT-01** **Complex number:-** Definition , real and imaginary part of complex number .

	12th	04 P	Polar and Cartesian representation of complex number and its conversion from one form to other, conjugate of a complex number. Modulus and amplitude of a complex number .
	13th	04 P	Monthly Test-02 Addition and subtraction of a complex number . Multiplication and division of a complex number.
November	15th	04 P	De- movier's theorm its application.Solve example and problems of complex number. **Partial fraction:-** Definition of polynomial fraction proper and improper fractions and definition of partial fractions.
	16th	04 P	To resolve proper fraction into partial fraction with denominator containing non repeated linear factor. Repeated linear factors and irreducible non repeated quadratic factors.
	17th	04 P	To resolve improper fraction into partial fraction . Solve Example and problems.
	18th	04 P	Monthly Test-03 **Permutation and Combination :-** Value of P(n,r) and C(n,r). Problems.
December	19th	04 P	**INTERNAL ASSESSMENT-02** **Binomial Theorem:-**Binomial theorem for positive integral index(expansion and general form).solve examples.
	20th	04 P	Binomial theorem for any index (expansion without proof) first and second binomial approximation with applications to engineering problems.
	21th	04 P	Solve examples and problems. Revision all units
	22th	04 P	**Revision &Previous year question & Answer discussion.**
			VERY SIMILAR TEST/MOCK TEST

LESSON PLAN

Discipline: **Metallurgical engineering**	Semester: **1st semester**	Name of the Teaching Faculty : **Deepak Kumar Sahoo Sadashiba Mohanta**
Subject: **Engineering Mathematics-I** Sub code: **Th-3**	No of days /week class allotted:**04/week**	Semester from Date:**16/08/2024 to 24/12/2024** No of weeks:**21**

Month	Week	No of periods available	Theory topics to be covered
August	1st	02 P	**Trigonometry:-**Concept of angles, Addition formulae
	2nd	04 P	Measurement of angles in degrees, grades and radians and their conversion. T-ratios of Allied angles(without proof)
	3rd	04 P	T-ratios of Allied angles ,sum, difference formulae and their application. product formulae (Transformation of product to sum , difference and vice versa).
September	4th	04 P	T-ratios of multiple angles ,sub multiple angles.(sin 2A,cos2A,tan2A,sin3A,cos3A, $\sin\frac{A}{2}$ $\cos\frac{A}{2}$ $\tan\frac{A}{2}$)
	5th	04 P	Graphs of $\sin x$, $\cos x$, $\tan x$, *and* e^x. Solve Example and problems .
	6th	04 P	**Differential calculus :-**Definition of function . Concept of limits. Four standard limits $\lim_{x\to a}\frac{x^n-a^n}{x-a}$, $\lim_{x\to 0}\frac{\sin x}{x}$, $\lim_{x\to a}\left(\frac{a^x-1}{x}\right)$, $\lim_{x\to a}(1+x)^{\frac{1}{x}}$, differentiation by definition of x^n, $\sin x$, $\cos x$, $\tan x$, x^n, $\log x$.
	7th	04 P	Monthly Test-01 Differentiation of sum ,product and quotient of functions. Differentiation of function of a function . differentiation of trigonometric and inverse trigonometric function .
October	8th	03 P	Differentiation of logarithmic and exponential function. Solve all example and problems.
	9th		PUJA HOLIDAYS
	10th	03 P	**Complex number:-** Definition , real and imaginary part of complex number . **INTERNAL ASSESSMENT-01**
	11th	04 P	Polar and Cartesian representation of complex number and its conversion from one form to other, conjugate of a complex number. Modulus and amplitude of a complex number .

	12th	02 P	Monthly Test-02 Addition and subtraction of a complex number .
November	13th	02 P	Multiplication and division of a complex number . De- movier's theorm its application.
	14th	04 P	Solve example and problems of complex number. **Partial fraction:-** Definition of polynomial fraction proper and improper fractions and definition of partial fractions. To resolve proper fraction into partial fraction with denominator containing non repeated linear factor.
	15th	02 P	Repeated linear factors and irreducible non repeated quadratic factors. To resolve improper fraction into partial fraction .
	16th	04 P	Solve Example and problems. **Permutation and Combination :-** Value of P(n,r) and C(n,r).
	17th	04 P	Monthly Test-03 **Binomial Theorem:-**Binomial theorem for positive integral index(expansion and general form).solve examples.
December	18th	04 P	**INTERNAL ASSESSMENT-02** Binomial theorem for any index (expansion without proof) first and second binomial approximation with applications to engineering problems.
	29th	04 P	Solve examples and problems. Revision all units
	20th	04 P	**Revision &Previous year question & Answer discussion.**
	21th	01 P	
		VERY SIMILAR TEST/MOCK TEST	

LESSON PLAN

Discipline: **Mining engineering**	Semester: **1st semester**	Name of the Teaching Faculty : **Deepak Kumar Sahoo Sadashiba Mohanta**
Subject: **Engineering Mathematics-I** Sub code: **Th-3**	No of days /week class allotted:**04/week**	Semester from Date:**16/08/2024 to 24/12/2024** No of weeks:**22**

Month	Week	No of periods available	Theory topics to be covered
August	1st	01 P	**Trigonometry:-**Concept of angles, Addition formulae
	2nd	03 P	Measurement of angles in degrees, grades and radians and their conversion. T-ratios of Allied angles(without proof)
	3rd	03 P	T-ratios of Allied angles ,sum, difference formulae and their application. product formulae (Transformation of product to sum , difference and vice versa).
September	4th	04 P	T-ratios of multiple angles ,sub multiple angles.(sin 2A,cos2A,tan2A,sin3A,cos3A, $\sin\frac{A}{2}$ $\cos\frac{A}{2}$ $\tan\frac{A}{2}$)
	5th	04 P	Graphs of $\sin x$, $\cos x$, $\tan x$, $and\ e^x$. Solve Example and problems .
	6th	03 P	**Differential calculus :-**Definition of function . Concept of limits. Four standard limits $\lim_{x\to a}\frac{x^n-a^n}{x-a}$, $\lim_{x\to 0}\frac{\sin x}{x}$, $\lim_{x\to a}\left(\frac{a^x-1}{x}\right)$, $\lim_{x\to a}(1+x)^{\frac{1}{x}}$, differentiation by definition of x^n, $\sin x$, $\cos x$, $\tan x$, x^n, $\log x$.
	7th	04 P	Monthly Test-01 Differentiation of sum ,product and quotient of functions. Differentiation of function of a function . differentiation of trigonometric and inverse trigonometric function .
	8th	01P	Differentiation of logarithmic and exponential function.
October	9th	01 P	Solve all example and problems.
	10th		PUJA HOLIDAYS

	11th	02 P	**Complex number:-** Definition , real and imaginary part of complex number . **INTERNAL ASSESSMENT-01**
	12th	04 P	Polar and Cartesian representation of complex number and its conversion from one form to other, conjugate of a complex number. Modulus and amplitude of a complex number .
	13th	03 P	Monthly Test-02 Addition and subtraction of a complex number . Multiplication and division of a complex number.
November	14th	01 P	De- movier's theorm its application.
	15th	04 P	Solve example and problems of complex number. **Partial fraction:-** Definition of polynomial fraction proper and improper fractions and definition of partial fractions. To resolve proper fraction into partial fraction with denominator containing non repeated linear factor.
	16th	03 P	Repeated linear factors and irreducible non repeated quadratic factors. To resolve improper fraction into partial fraction .
	17th	04 P	Solve Example and problems. **Permutation and Combination :-** Value of P(n,r) and C(n,r).
	18th	04 P	Monthly Test-03 **Binomial Theorem:-**Binomial theorem for positive integral index(expansion and general form).solve examples.
December	19th	04 P	**INTERNAL ASSESSMENT-02** Binomial theorem for any index (expansion without proof) first and second binomial approximation with applications to engineering problems.
	20th	04 P	Solve examples and problems. Revision all units
	21th	04 P	**Revision &Previous year question & Answer discussion.**
	22th	01P	
			VERY SIMILAR TEST/MOCK TEST

LESSON PLAN

Discipline: **Drilling and Mechanical**	Semester: **1st semester**	Name of the Teaching Faculty : **Deepak Kumar Sahoo Sadashiba Mohanta**
Subject: **Engineering Mathematics-I** Sub code: **Th-3**	No of days /week class allotted:**04/week**	Semester from Date:**16/08/2024 to 24/12/2024** No of weeks:**20**

Month	Week	No of periods available	Theory topics to be covered
August	1st	02 P	**Trigonometry:-**Concept of angles, Addition formulae
	2nd	04 P	Measurement of angles in degrees, grades and radians and their conversion. T-ratios of Allied angles(without proof)
	3rd	04 P	T-ratios of Allied angles ,sum, difference formulae and their application. product formulae (Transformation of product to sum , difference and vice versa).
September	4th	02 P	T-ratios of multiple angles ,sub multiple angles.(sin 2A,cos2A,tan2A,sin3A,cos3A, $\sin\frac{A}{2}$ $\cos\frac{A}{2}$ $\tan\frac{A}{2}$)
	5th	04 P	Graphs of $\sin x$, $\cos x$, $\tan x$, *and* e^x. Solve Example and problems .
	6th	04 P	**Differential calculus :-**Defination of function . Concept of limits. Four standard limits $\lim_{x\to a}\frac{x^n-a^n}{x-a}$, $\lim_{x\to 0}\frac{\sin x}{x}$, $\lim_{x\to a}\left(\frac{a^x-1}{x}\right)$, $\lim_{x\to a}(1+x)^{\frac{1}{x}}$, differentiation by definition of x^n, $\sin x$, $\cos x$, $\tan x$, x^n, $\log x$.
	7th	04 P	Monthly Test-01 Differentiation of sum ,product and quotient of functions. Differentiation of function of a function . differentiation of trigonometric and inverse trigonometric function .
October	8th	03 P	Differentiation of logarithmic and exponential function. Solve all example and problems.
	9th		PUJA HOLIDAYS
	10th	03 P	**Complex number:-** Definition , real and imaginary part of complex number . **INTERNAL ASSESSMENT-01**
	11th	04 P	Polar and Cartesian representation of complex number and its conversion from one form to other, conjugate of a complex number. Modulus and amplitude of a complex number . addition and subtraction of a complex number .

	12th	01 P	Monthly Test-02
November	13th	02 P	Multiplication and division of a complex number . De- movier's theorm its application.
	14th	04 P	Solve example and problems of complex number. **Partial fraction:-** Definition of polynomial fraction proper and improper fractions and definition of partial fractions. To resolve proper fraction into partial fraction with denominator containing non repeated linear factor.
	15th	03 P	Repeated linear factors and irreducible non repeated quadratic factors. To resolve improper fraction into partial fraction .
	16th	04 P	Solve Example and problems. **Permutation and Combination :-** Value of P(n,r) and C(n,r).
	17th	04 P	Monthly Test-03 **Binomial Theorem:-**Binomial theorem for positive integral index(expansion and general form).solve examples.
December	18th	04 P	**INTERNAL ASSESSMENT-02** Binomial theorem for any index (expansion without proof) first and second binomial approximation with applications to engineering problems.
	29th	04 P	Solve examples and problems. Revision all units
	20th	04 P	**Revision &Previous year question & Answer discussion.**
		VERY SIMILAR TEST/MOCK TEST	