SYLLABI FOR MASTER OF ENGINEERING IN CHEMICAL ENGINEERING EXAMINATIONS 2023-2025

SYLLABI FOR MASTER OF ENGINEERING IN CHEMICAL ENGINEERING EXAMINATIONS

SCHEME OF TEACHING AND EXAMINATION

Paper	Subject	Teaching Hrs. per Week	End Term	Mid Term	Total

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Paper	Subject	Teaching Hrs. per Week	End Term	Mid Term	Total Marks
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*** List of Open Elective (CHE 3.1)**

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***Solution of Linear difference equations*:** o n y nc on nd . c n

Unit III

***Z-Transforms*:** n od c on o nd d n o L n y o y n o nd d n n nd n o on o on o

***Evaluation of inverse Z-transforms*:** o od c on od n on n od A c on o n o od nc on

Unit IV

***Fourier Transforms*:** n od c on o n o o o n o on o on o d n y o n o on w n o nd L c n o o n o d o nc on A c on o Bo nd y o

***Books Recommended*:**

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w B — M n n n M c nn N d on

y z w n — Ad nc d n n n M c d on y n N w

n — N c o on o on nd d on nc M

Mc y M w ood — A d M c n c n n n nd d y

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be divided into FOUR Units having TWO questions each and candidate is required to attempt at least ONE question from each Unit. The duration of End Term exam will be 3 hrs.

UNIT-I

Review of Fundamental Concepts of Mole Balances c on n o nc on Mo nc on d n c o y c nd co nd co

Conversion and Reactor Sizing n on o c nd y A c on o d n on o nd o co c o n c nd c oa y

Rate Laws and Stoichiometry o c on con n n y c on non n y c on c on c y aci o c o y aci o c o c n on

Isothermal Reactor Design n c o o c o c o d c co d od no co

Collection and Analysis of Rate Data n od ndin od o n y od o d n co on o o y co d d d c co d con n d o d co con n o d n co o n o co ac n n o co

Multiple Reactions ond on o i zin d d od c n c on M i zin d d od c n c on aci o c n c on con on o c on

UNIT-II

Catalysis and Catalytic Reactions c y c on yn i zin w c n nd n d no co o o d c on o n o d n y o co d n

Diffusion and Reaction in Porous Catalysts Mo c w n y d on d on nd c on n c c y on o d on nd c on d

UNIT-III

Non-Isothermal Reactor Design n y nc c d o con n o n nd c a dd d o co Non o con n o o co dy c on o d c co dy co c n M dy M n

Reactors for Catalytic Reactions d z d co n o on o nd d o d co n d z d d B B L od o B B nd a c n d z d d B y co o o on n o oc y d on nd c on n c y w nd

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Note for the Paper setter: Question No. 1, which is compulsory, will cover the entire syllabus, having ten conceptual questions of one mark each or five questions of two marks each. Rest of the Questions (2 to 9) will be divided into FOUR Units having TWO questions each and candidate is required to attempt at least ONE question from each Unit. The duration of End Term exam will be 3 hrs.

Unit I

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Paper Title: TRANSPORT PHENOMENA (Theory)
Paper Code : CHE 1.5 Max. Marks 50 Credits : 4 Time: 3 hours
Note for the Paper setter: Question No. 1, which is compulsory, will cover the entire syllabus, having ten conceptual questions of one mark each or five questions of two marks each. Rest of the Questions (2 to 9) will be divided into FOUR Units having TWO questions each and candidate is required to attempt at least ONE question from each Unit. The duration of End Term exam will be 3 hrs.

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***Forced convection Inside Tubes & Ducts*:**

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WaterTreatmentMethods

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POLYMER CHEMISTRY & CHARACTERIZATION

Question No. 1, which is compulsory, will cover the entire syllabus, having ten conceptual questions of one mark each or five questions of two marks each. Rest of the Questions (2 to 9) will be divided into FOUR Units having TWO questions each and candidate is required to attempt at least ONE question from each Unit. The duration of End Term exam will be 3 hrs.

Unit I

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Unit III

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***Books Recommended*:**

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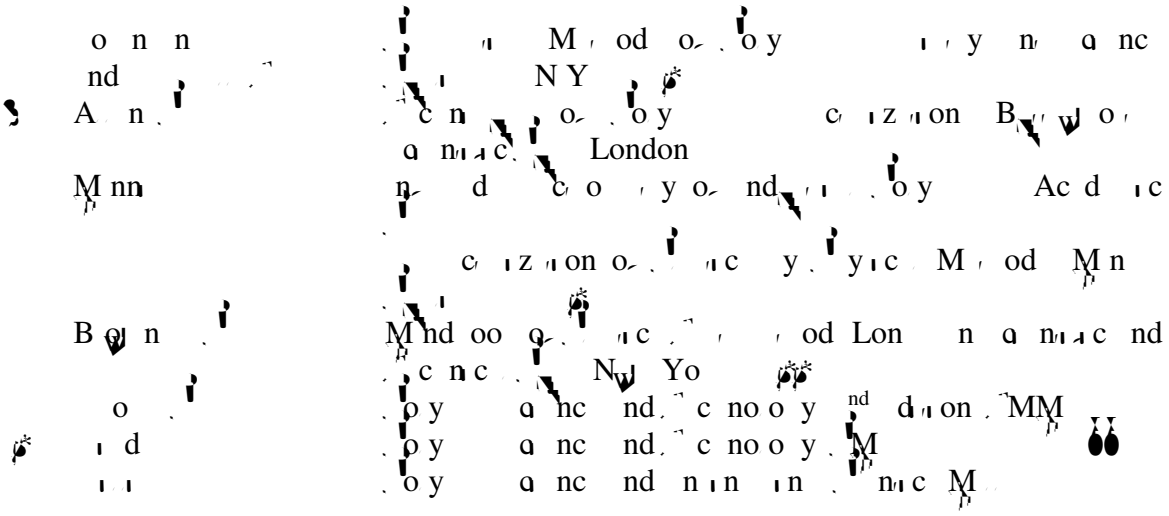
SYLLABI FOR MASTER OF ENGINEERING IN CHEMICAL ENGINEERING EXAMINATIONS 2023-2025



ALTERNATE ENERGY TECHNOLOGY

Question No. 1, which is compulsory, will cover the entire syllabus, having ten conceptual questions of one mark each or five questions of two marks each. Rest of the Questions (2 to 9) will be divided into FOUR Units having TWO questions each and candidate is required to attempt at least ONE question from each Unit. The duration of End Term exam will be 3 hrs.

Unit I

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Question No. 1, which is compulsory, will cover the entire syllabus, having ten conceptual questions of one mark each or five questions of two marks each. Rest of the Questions (2 to 9) will be divided into FOUR Units having TWO questions each and candidate is required

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Differential Equations of fluid flow on n y on o on d n on nd d n on o n on o d n on o n coo d n

UNIT-II

Flow of non-viscous flows on o o on on nd n on o o n B no on oq y o n nd o on o n nd nc on o w o d n on nco o w o d n on o on o nd o n

Laminar flow of viscous fluids c o co y on o d n n dy n o o o o n on n cy nd c coo d n oq y o n o o n o c nd nn nd c on c o on o n n n nd oq y o n non o cond on

UNIT-III

Turbulent flow of viscous fluids nd n n o y yno d on o n co n o yno d c o y o nd nc n on om on n oq yd

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EXAMINATIONS 2023-2025

PROCESS DYNAMICS AND CONTROL

Paper Code : CHE 2.4 **Max. Marks 50** **Credits : 4** **Time: 3 hours**
Course Duration: 45 Lectures of one hour each.
Note for the Paper setter: **Question No. 1, which is compulsory, will cove**

***Multivariable Control*:** c n on o y c y n nc on n on o con o oo n y nd c on o oo n o non n c n con o oo d co c nd d co n

Feedback control systems with large dead time d co n on n d c o c o n o d d co n o c o od n o

UNIT-IV

yn c o o con o y A w ***Root Locus Technique:*** d n n o con o y o con o y y oo oc od n nd con o d c y o c

***Model based control*:** c yn od M con o d n d on oc od nd d d c o d oo n nc on n Mod on o c c o M d n o n n od con o M nd con n on d c con o

***Digital control*:** n od c on o d co con o o d n n con n o n nd con c on

Books Recommended

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EXAMINATIONS 2023-2025

M. E. (CHEMICAL ENGINEERING)
THIRD SEMESTER

Paper Title: OPEN ELECTIVE(Theory)
Paper Code : CHE 3.1 Max. Marks 50 Credits : 4 Time: 3 hours
Course Duration: 45 Lectures of one hour each.

Title	**ANALYTICAL TECHNIQUES**	**Credits**	
Max.Marks	**End term- 50**	**Mid term- 50**	

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Unit 1

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Unit 2

Thermoanalyticalmethods na c ac ono od
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X-ray crystallography nd n X y nd o o X y d c on
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Unit 3

IR Spectroscopy na o y o c on on ncy
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UV-Vis Spectroscopy n od c on o o on o n o c y o
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Unit 4

NMR na c c ac c o c n c c o

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Title	**PROJECT MANAGEMENT**			**Credits**	
Max.Marks	**End term 50**	**Mid-term 50**	**Practical --**	**Elective**	N
Pre requisites					
Course Objectives					

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Unit III

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***Books Recommended*:**

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SAFETY & HAZARDS

Note for the Paper setter: Question No. 1, which is compulsory, will cover the entire syllabus, having ten conceptual questions of one mark each or five questions of two marks each. Rest of the Questions (2 to 9) will be divided into FOUR Units having TWO questions each

5. Safety for Chemical Engineers : A.I.Ch.E Publications, 1976-77

Course Objectives: This course aims to equip students with the knowledge and skills to identify workplace hazards, assess risks, implement effective hazard controls, and promote safety in various industries. Students will understand toxic chemicals, handle mechanical and electrical hazards, prevent fires, manage explosive and flammable substances, and respond to emergencies. Additionally, they will learn about Indian safety legislation and analyze case studies to improve workplace safety practices.

Course Outcomes:
At the end of the syllabus the students will able to understand:
1. Identify Hazards and Assess Risks: Students can recognize workplace hazards and conduct risk assessments for potential harm.
2. Implement Hazard Controls: Students apply various measures to mitigate hazards and promote safety.
3. Respond to Emergencies: Students effectively respond to workplace emergencies and adhere to safety protocols.
4. Comply with Safety Standards: Students understand safety regulations, codes, and legislation, fostering a safety-conscious culture.

COMPOSITE MATERIALS

Note for the Paper setter: Question No. 1, which is compulsory, will cover the entire syllabus, having ten conceptual questions of one mark each or five questions of two marks each. Rest of the Questions (2 to 9) will be divided into FOUR Units having TWO questions each and candidate is required to attempt at least ONE question from each Unit. The duration of End Term exam will be 3 hrs.

Unit I

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Unit III

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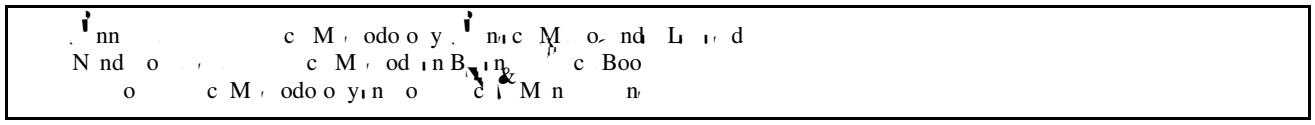
Title	RESEARCH METHODOLOGY	Credits	
Code			

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