NAKSHATRA

GYANSUTRA

SEMESTER EXAM SUCCESS : YOUR GO TO GUIDE

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Dear College Freshies,
Welcome to the comprehensive compilation of notes and study materials that we have meticulously put together to support you in your academic journey. As you embark on this new phase of your college experience, we are excited to share these resources with you to help you excel in your studies.

The primary aim of this document is to provide you with a valuable resource that consolidates key concepts, notes, and study materials across various subjects. Our goal is to support you in your learning process and empower you to achieve academic success.

Within this document, you will find each and every subject and topics of first year covered, including lecture notes, handwritten notes, short notes, playlists, tutorial sheets, Class Tests, previous year papers and even practical files too. Each section is carefully curated to offer a comprehensive overview of the essential information you need to succeed in your coursework.

To make the most of these materials, we recommend using them for revision, exam preparation, and as supplementary study aids. Remember, these resources are here to support you in your academic endeavors.

As you delve into these notes and study materials, remember that you have the potential to achieve great things. Stay focused, stay motivated, and never hesitate to reach out if you need help or guidance. We believe in your abilities and we are here to support you every step of the way.

We hope that this compilation serves as a valuable tool in your academic pursuits and helps you reach your full potential. Best of luck in your studies, and remember that with dedication and perseverance, you can accomplish anything.

Warm regards,
Nakshatra, The Astronomy and Mathematics Society of NSUT.

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Mathematics-1

Syllabus: FCMT0101_Mathematics-1

Recommended book: Jaggi Mathur

Unit	Notes	Playlist
Unit-1:	Hyperbolic Functions	Unit-1
Unit-2:	Successive Differentiation	Unit-2
Unit-3:	Application of Integrals , Integration formulas , Gamma and Beta functions	Unit-3
Unit-4:	Multiple Integrals	Unit-4
Unit-5:	Infinite Series , Maclaurin's and Taylor's Theoram	Unit-5

Revision Notes: Complete short notes

Tutorial sheets:

Tut-Sheet No.	Tut Sheet Topic	Tut Sheet Solution
1	Limit,continuity, IVT,differentiability, hyperbolic functions	Tut-1 (Solutions)
2	Tut-2	Tut-2 (Solutions)
3	Partial derivatives, Euler's Theorem, Change of variable, Taylor's Theorem.	Tut-3 (Solutions)
4	Tut-4	Tut-4(Solutions)
5	Double mid Tripe intcgral,change of variable and its application,beta and Gamma function	Tut-5(Solutions)

Previous Year Questions :

Endsems PYQs
Midsems PYQs

English

Syllabus : English Syllabus

Books : Book (Mainly for writing section)

Lecture Notes: Complete Notes

Practical file: File

Previous Year Questions :

- Endsems PYQs
- Midsems PYQs

Environmental & Green Chemistry

Lecture Notes:

Unit-1 Introduction to Environmental Chemistry
Unit-2 Water Chemistry Numericals
Unit-3 Green Chemistry
Unit-4 Green fuel and Bio-Polymer Chemistry
Unit-5 Chromatography and Instrumental methods of analysis

Handwritten Notes: Unit 2 to 5

Question Bank:

Question Bank	QB-1	QB-2

Practical file: Practical file

Previous Year Questions :

Endsem PYQs
Midsem PYQs

Basic Of Mechanical Engineering

Syllabus: Syllabus

Notes:

Unit-1 : Introduction to Engineering Mechanics
Unit-2: Introduction to Strength of Materials
Unit-3: Introduction to Thermodynamics
Unit-4: Introduction to Internal Combustion (IC) Engines
Unit-5: Introduction to Fluid Dynamics

Previous Year Questions:

Endsems PYQs
Midsems PYQs

Basic Of Civil Engineering

Ashi Mam (Lecture Notes):

Unit-1 : Intro to Civil Engineering & Civil Engineering Materials
Unit-2 : Building Construction and Building Services
Unit-3 : Introduction to Surveying And Levelling
Unit-4 : Basics of Soil Mechanics and Pavement Engineering
Unit-5 : Advancements in Civil Engineering

Shemin Sir (Lecture Notes):

Unit-1 : Intro to Civil Engineering & Civil Engineering Materials
Unit-2 : Building Construction and Building Services
Unit-3 : Introduction to Surveying And Levelling
Unit-4 : Basics of Soil Mechanics and Pavement Engineering
Unit-5 : Advancements in Civil Engineering , Green Building , Mass Transit System

Previous Year Questions :

Endsems
Midsems

Handwritten Notes : Complete Handwritten Notes

Assignments & Numericals : Assignments & Numericals

Important Topics : Important Topics

Computer Programming

Syllabus: Syllabus

Playlists:

Unit-1: Introduction to Python Programming
Unit-2: OOPs and Lambda function
Unit-3: Arrays and Strings
Unit-4: File and Exception Handling
Unit-5: Matplotlib and Flask

Typed notes: Notes

Code with Harry notes:

Python Complete Note	OOPs	Cheatsheet

Assignment and Sample Question:

S.NO.	Assignment	Solution
1	Assignment-1	Assignment-1(Solution)
2	Assignment-2	Assignment-2(Solution)
3	Sample Question	Solutions

Practical file: File

Previous Year Questions :

Endsems PYQs
Midsems PYQs

Fundamental of Electrical Engineering

Syllabus: Syllabus

Books: Mc Graw Hill

Notes:

Unit-1: Measurements
Unit-2: AC & DC Circuits
Unit-3: Transformer
Unit-4: Rotating Machines
Unit-5: Power Systems

Complete FEE Notes: Complete FEE

Previous Year Questions :

Endsems PYQs
Midsems PYQs

Principle of Electrical Engineering

Syllabus : Syllabus

Books : Books

Notes:
Unit-1 : D.C. Circuits
Unit-2 : AC Circuits
Unit-3 : Magnetic Circuits
Unit-4 : Signals
Unit-5 : Systems

Complete OneShot Notes : Complete Syllabus Notes

Practical File : PEE Practical File

Playlists :
For Units 1 , 2 and 3 (First 32 videos)
For Units 4 and 5 (First 19 videos)

Previous Year Questions :
Endsems PYQs
Midsems PYQs

Quantum Physics

Lecture Notes:

Unit-1: Unit-1
Unit-2: Unit-2
Unit-3: Unit-3
Unit-4: Unit-4
Unit-5: Unit-5

Problem Questions of Unit-1 & 2:

Part-1
Part-2

Syllabus: Syllabus_QM

Previous Year Questions :

Endsems PYQs
Midsems PYQs

Oscillations , Waves , Optics

Syllabus: Syllabus
Book preferred: AK Jha

Notes:
Unit-1: Introduction to Oscillations and waves
Unit-2: Wave motion
Unit-3: Wave Optics
Unit-4: Lasers
Unit-5: Fibre Optics

Previous Year Questions :
Endsems PYQs
Midsems PYQs

Analog & Digital Electronics

Syllabus: Syllabus
Books suggested:
- Sedra Smith (Preferred)
- Boylestad
- Balbir Kumar

Notes:
Unit-1: Diode and Applications
Unit-2: BJT
Unit-3: Op-Amp and Digital Circuits
Unit-4: Combinational Logic Circuit
Unit-5: Combinational Logic Circuit

Practical file: Practical file

Playlist :
- For Units 1 and 2
- For Units 3 , 4 and 5

Previous Year Questions :
- Endsems PYQs
- Midsems PYQs

Electronic Devices & Circuits

Syllabus: Syllabus

Books preferred:

Sedra S Smith
Boylestad

Notes:

Unit-1 : Semi-Conductors
Unit-2: Diodes
Unit-3: BJT
Unit-4: MOSFET
Unit-5: Op-Amp

All in one notes: Complete Notes

Practical File: Practical file

Playlists:

Playlist	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5

Previous Year Questions :

Endsems PYQs
Midsems PYQs

Principles of Photogrammetry & Photo Interpretation

Book (Preferable): Paul R Wolf

Extra Materlals:

- Photogrammetry
- PPPI Self Notes

Syllabus: Syllabus_PPPI

Assignment:

Questions
Answers

Previous Year Questions :

- Endsem PYQs
- Midsem PYQs

Engineering Mechanics

Syllabus: Syllabus

Books Preferred:

Irving H. Shames
RS Khurmi

PYQs:

Midsem 2024
Endsem 2023
Midsem 2023

Previous Year Questions :

Endsem PYQs
Midsem PYQs

Fundamentals of Remote Sensing

Book (Preferable):

Anji Reddy
Basedeb Bhatta (Recommended)

Syllabus: Syllabus_FRS

Extra Materials:

Remote Sensing
Unit-4
Unit-5

Practical File:

File
Experiment_photos

Previous Year Questions :

Endsem PYQs
Midsem PYQs

Mathematics-2

	Playlists:	Handwritten Notes:
Unit-1:	Differential Equation	Differential Equations
Unit-2:	Matrices	Matrices
Unit-3:	Numerical Analysis	Numerical Analysis
Unit-4:	Complex Numbers	Complex Numbers
Unit-5:	Probability and Statistics	Probability and Statistics

Books preferred:

Advance Jaggi Mathur
MD Rai Singhania (for ODE)

Syllabus of 1st and 2nd Sem: Syllabus

Notes of HOD of Maths:

Notes	Unit-1	Unit-2	Unit-3	Unit-4	Unit-5

Previous Year Questions :

Endsem PYQs
Midsem PYQs

Data Structure & Algorithm

	Notes	Playlists
Unit-1:	Intro to Data Structure	Intro to Data Structure
Unit-2:	Linked Lists	Linked Lists
Unit-3:	Trees	Trees
Unit-4:	Graphs	Graphs
Unit-5:	Searching & Sorting	Searching & Sorting

Handwritten Notes:

Notes-1
Notes-2

Book preferred:

E. Horowitz and S. Sahani
Reema Thareja

Syllabus: DSA Syllabus

Previous Year Questions:

Endsem PYQs
Midsem PYQs

Discrete Structures

Vishu's Notes: Complete Notes
Short Notes: Revision Notes

Syllabus: Syllabus

Tutorial Sheets:

- Tutsheet-1
- Tutsheet-2
- Tutsheet-3
- Tutsheet-4

Digital Logic Design

Vishu's Notes: Complete Notes

Short Notes: Revision Notes

Syllabus: Syllabus

Few questions: Questions

Some extra materials:

- VHDL
- PLD
- DAC

Previous Year Questions :

- Endsem PYQs
- Midsem PYQs

Electrical Measurements

Lecture Notes:

Unit-1: Units & Errors Numericals-1 Numericals-2
Unit-2: AC Bridges Numericals
Unit-3: Potentiometer Numericals-1 Numericals-2
Unit-4: Potentiometer Numericals-1 Numericals-2 Numericals-3
Unit-5: Instrument Transformers Numericals-1 Numericals-2

Handwritten Notes: Complete notes

Syllabus: Syllabus

Books: AK Sawhney (one and only best one)

Practical file: Practical file-1 Practical file-2

Previous Year Questions :

Endsem PYQs
Midsem PYQs

Electrical Circuits Analysis

Syllabus: Syllabus_ECA

Lecture Notes:

Unit-1: Unit-1
Unit-2: Unit-2
Unit-3: Unit-3
Unit-4: Unit-4
Unit-5: Unit-5

Previous Year Questions :

Endsem PYQs
Midsem PYQs

Network Analysis & Synthesis

Complete Notes: Raj Senani Sir Notes

Handwritten Notes: Notes

Revision Notes: Short Notes

Syllabus: Syllabus

Previous Year Questions :

Endsem PYQs
Midsem PYQs

Introduction To ElectroMagnetic Theory

Notes

Unit-1: Notes-1 Notes-2
Unit-2: Notes
Unit-3: Basics Complete Notes EM Braking
Unit-4: Notes
Unit-5: Complete Notes Unit-5

Syllabus: Syllabus
Books preferred: Griffiths

Assignments:

Assignment-1 Assignment-1 (solutions)

Previous Year Questions :

Endsem PYQs
Midsem PYQs

Data Structures

	Lecture Notes:	Playlists:
Unit-1:	Introduction to Data Structure	Intro to Data Structure
Unit-2:	Linked Lists	Linked Lists
Unit-3:	Trees, Heaps	Trees
Unit-4:	Graphs	Graphs
Unit-5:	Searching	Searching & Sorting

Syllabus:

Syllabus_DS
Lab syllabus

Previous Year Questions :

Endsems PYQs
Midsem PYQs

Surveying

Handwritten Notes:

Notes
Surveying Detailed Notes

Book preferred:

Dr. B.C. Punmia (Vol 1)
Dr. B.C. Punima (Vol 2)

Syllabus: Syllabus

	Notes:	Assignments:
Unit-1:	Unit-1	Unit-1
Unit-2:	Unit-2	Unit-2
Unit-3:	Unit-3	Unit-3
Unit-4:	Unit-4	Unit-4
Unit-5:	Unit-5	Unit-5

CT:

Part-1
Part-2

Previous Year Questions :

Endsems PYQs
Midsem PYQs

EG-CAD

Playlists:

Unit-1: Cycloidal curves (Cycloid, Epicycloid, Hypocycloid)

Unit-2: Projection of points
Projection of lines
Projection of planes

Unit-3: Projection of solids
Development of surfaces of right regular solids

Unit-4: Isometric Projections

Unit-5: Civil Drawing (Notes)

Syllabus: Syllabus

Book: N.D Bhatt (Engineering Drawing)

Previous Year Questions :

Endsems PYQs
Midsems PYQs

Physics Of Materials

Syllabus: POM_Syllabus

Study Materials:

- Properties of Solids
- Imperfections in Solids
- Crystal Structure
- Defects
- Quantum Mechanics (Part-1)
- Quantum Mechanics (Part-2)
- Quantum Mechanics (Wave Particle Duality)
- Dielectric Materials
- Magnetic Materials
- Superconductivity

Previous Year Questions :

- Endsem PYQs
- Midsem PYQs

Advance Chemistry

Syllabus: Syllabus_Advance Chemistry

Study Materials:

- Reactive Intermediates
- Substitution Reaction (Part-1)
- Substitution Reaction (Part-2)
- Substitution Reaction (Part-3)

Previous Year Questions :

- Endsem PYQs
- Midsem PYQs

Introduction To Biotechnology

Syllabus: Syllabus

Notes:
Unit-1: Biomolecules
Unit-2: Water

Previous Year Questions :
Endsem PYQs
Midsem PYQs

Strength Of Materials

Book: RK Bansal
Youtube channel recommended: Gear Institute

Previous Year Questions :

Endsem PYQs
Midsem PYQs

Engineering Materials & Metallurgy

Notes:

Unit-1: Introduction to materials
Unit-2: Mechanical properties and testing
Unit-3: Phase diagram and Equilibrium Diagram
Unit-4: Heat Treatment
Unit-5: Composites

Previous Year Questions

Endsem PYQs
Midsem PYQs

Thermal Engineering

Syllabus: Syllabus

Lecture Notes: Lecture Notes

Extra Materials:

- Introduction to Internal Combustion (IC) Engines
- DS Kumar Entropy
- DS Kumar 2nd Law of Thermodynamics (most important)

Previous Year Questions :

- Endsem PYQs
- Midsem PYQs

Basic Fluid Mechanics

Syllabus: Syllabus_Basic Fluid Mechanics

Lecture Notes:

Unit-1: Fluid Properties
Unit-2: Fluid Kinetics and Dynamics
Unit-3:
Unit-4: Fluid Machines
Unit-5: Power Hydraulics

Previous Year Questions :

Endsem PYQs
Midsem PYQs

Applied Physics

Study Material:

Semiconductors
Introduction to Nanophysics
Applied Physics complete notes

Previous Year Questions :

Endsem PYQs
Midsem PYQs

Design Thinking

Notes: Short Notes

Basics Of ECE

Book preferred:

Boylestad (For Unit 3 & 4)

Syllabus: Syllabus

Unit-1:	Lecture Notes	Handwritten Notes
Unit-2:	Lecture Notes	Handwritten Notes
Unit-3:	Part Wise	One Shot
Unit-4:	Lecture Notes	One Shot
Unit-5:	Notes	

Youtube Playlist

Unit-1:	Signals and Systems		
Unit-3:	Diode	BJT	MOSFET
Unit-4:	Op-amp		

Previous Year Questions :

Endsems PYQs

Midsem PYQs

Feedback Form

Hello Juniors!!!
As we've complied resources of every subject of the first year of B.Tech, we want you to give us feedback of our work. Your feedback matters a lot for us. If you find something wrong or missing in Gyansutra, don't hesitate to tell us through this Form (use NSUT Email Id) or in our WhatsApp group.

Form: https://forms.gle/NSt3bpF4DiRUqhrZ9
Whatsapp Group: https://chat.whatsapp.com/Hx1YLNsfJOJKzw-gAC187Rc
Now it's your turn to use this masterpiece and excel in your exams. Best of luck to all of you.