



AICTE ID: 1-3548321

College Code: 231

# R.D. ENGINEERING COLLEGE

Approved by AICTE New Delhi & Affiliated to Dr. APJ Abdul Kalam Technical University, Lucknow  
under the aegis of IQAC

Date: 15/01/2019

## DEPARTMENT OF CIVIL ENGINEERING

### NOTICE

Dear CE VI semester students,

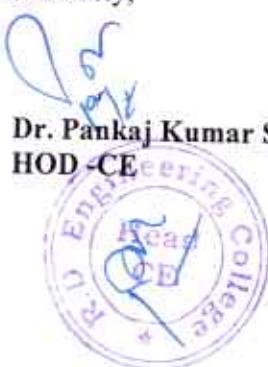
We are excited to announce the commencement of special classes for the preparation of the Graduate Aptitude Test in Engineering (GATE). The GATE exam is a gateway to some of the most prestigious postgraduate programs and job opportunities in the field of engineering.

**Class Details:**

**Commencement Date:** 25 Jan 2019

**Venue:** C Block Room C 202

Sincerely,



Dr. Pankaj Kumar Singh  
HOD -CE

  
Director  
R.D. Engineering College  
Duhai, Ghaziabad

  
Director  
R.D. Engineering College  
Duhai, Ghaziabad

## Section 1: Engineering Mathematics

**Linear Algebra:** Matrix algebra; Systems of linear equations; Eigen values and Eigen vectors.

**Calculus:** Functions of single variable; Limit, continuity and differentiability; Mean value theorems, local maxima and minima, Taylor and Maclaurin series; Evaluation of definite and indefinite integrals, application of definite integral to obtain area and volume; Partial derivatives; Total derivative; Gradient, Divergence and Curl, Vector identities, Directional derivatives, Line, Surface and Volume integrals, Stokes, Gauss and Green's theorems.

**Ordinary Differential Equation (ODE):** First order (linear and non-linear) equations; higher order linear equations with constant coefficients; Euler-Cauchy equations; Laplace transform and its application in solving linear ODEs; initial and boundary value problems.

**Partial Differential Equation (PDE):** Fourier series; separation of variables; solutions of one-dimensional diffusion equation; first and second order one-dimensional wave equation and two-dimensional Laplace equation.

**Probability and Statistics:** Definitions of probability and sampling theorems; Conditional probability; Discrete Random variables; Poisson and Binomial distributions; Continuous random variables; normal and exponential distributions; Descriptive statistics - Mean, median, mode and standard deviation; Hypothesis testing.

**Numerical Methods:** Accuracy and precision; error analysis. Numerical solutions of linear and non-linear algebraic equations; Least square approximation, Newton's and Lagrange polynomials, numerical differentiation, Integration by trapezoidal and Simpson's rule, single and multi-step methods for first order differential equations.

## Section 2: Structural Engineering

**Engineering Mechanics:** System of forces, free-body diagrams, equilibrium equations; Internal forces in structures; Friction and its applications; Kinematics of point mass and rigid body; Centre of mass; Euler's equations of motion; Impulse-momentum; Energy methods; Principles of virtual work.

**Solid Mechanics:** Bending moment and shear force in statically determinate beams; Simple stress and strain relationships; Theories of failures; Simple bending theory, flexural and shear stresses, shear centre; Uniform torsion, buckling of column, combined and direct bending stresses.

**Structural Analysis:** Statically determinate and indeterminate structures by force/ energy methods; Method of superposition; Analysis of trusses, arches, beams, cables and frames; Displacement methods; Slope deflection and moment distribution methods; Influence lines; Stiffness and flexibility methods of structural analysis.

**Construction Materials and Management:** Construction Materials: Structural steel - composition, material properties and behaviour; Concrete - constituents, mix design, short term and long-term properties; Bricks and mortar; Timber; Bitumen. Construction Management: Types of construction projects; Tendering and construction contracts; Rate analysis and standard specifications; Project planning and network analysis - PERT and CPM.

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Ghaziaabad  
Duhai, Ghaziabad



**Concrete Structures:** Working stress, Limit state and Ultimate load design concepts; Design of beams, slabs, columns; Bond and development length; Prestressed concrete; Analysis of beam sections at transfer and service loads.

**Steel Structures:** Working stress and Limit state design concepts; Design of tension and compression members, beams and beam-columns, column bases; Connections - simple and eccentric, beam-column connections, plate girders and trusses; Plastic analysis of beams and frames.

### Section 3: Geotechnical Engineering

**Soil Mechanics:** Origin of soils, soil structure and fabric; Three-phase system and phase relationships, index properties; Unified and Indian standard soil classification system; Permeability - one dimensional flow, Darcy's law; Seepage through soils - two-dimensional flow, flow nets, uplift pressure, piping; Principle of effective stress, capillarity, seepage force and quicksand condition; Compaction in laboratory and field conditions; One-dimensional consolidation, time rate of consolidation; Mohr's circle, stress paths, effective and total shear strength parameters, characteristics of clays and sand.

**Foundation Engineering:** Sub-surface investigations - scope, drilling bore holes, sampling, plate load test, standard penetration and cone penetration tests; Earth pressure theories - Rankine and Coulomb; Stability of slopes - finite and infinite slopes, method of slices and Bishop's method; Stress distribution in soils - Boussinesq's and Westergaard's theories, pressure bulbs; Shallow foundations - Terzaghi's and Meyerhoff's bearing capacity theories, effect of water table; Combined footing and raft foundation; Contact pressure; Settlement analysis in sands and clays; Deep foundations - types of piles, dynamic and static formulae, load capacity of piles in sands and clays, pile load test, negative skin friction.

### Section 4: Water Resources Engineering

**Fluid Mechanics:** Properties of fluids, fluid statics; Continuity, momentum, energy and corresponding equations; Potential flow, applications of momentum and energy equations; Laminar and turbulent flow; Flow in pipes, pipe networks; Concept of boundary layer and its growth.

**Hydraulics:** Forces on immersed bodies; Flow measurement in channels and pipes; Dimensional analysis and hydraulic similitude; Kinematics of flow, velocity triangles; Basics of hydraulic machines, specific speed of pumps and turbines; Channel Hydraulics - Energy-depth relationships, specific energy, critical flow, slope profile, hydraulic jump, uniform flow and gradually varied flow.

**Hydrology:** Hydrologic cycle, precipitation, evaporation, evapo-transpiration, watershed, infiltration, unit hydrographs, hydrograph analysis, flood estimation and routing, reservoir capacity, reservoir and channel routing, surface run-off models, ground water hydrology - steady state well hydraulics and aquifers; Application of Darcy's law.

**Irrigation:** Duty, delta, estimation of evapo-transpiration; Crop water requirements; Design of lined and unlined canals, head works, gravity dams and spillways; Design of weirs on permeable foundation; Types of irrigation systems, irrigation methods; Water logging and drainage; Canal regulatory works, cross drainage structures, outlets and escapes.



## Section 5: Environmental Engineering

**Water and Waste Water:** Quality standards, basic unit processes and operations for water treatment. Drinking water standards, water requirements, basic unit operations and unit processes for surface water treatment, distribution of water. Sewage and sewerage treatment, quantity and characteristics of wastewater. Primary, secondary and tertiary treatment of wastewater, effluent discharge standards. Domestic wastewater treatment, quantity of characteristics of domestic wastewater, primary and secondary treatment. Unit operations and unit processes of domestic wastewater, sludge disposal.

**Air Pollution:** Types of pollutants, their sources and impacts, air pollution meteorology, air pollution control, air quality standards and limits.

**Municipal Solid Wastes:** Characteristics, generation, collection and transportation of solid wastes, engineered systems for solid waste management (reuse/ recycle, energy recovery, treatment and disposal).

**Noise Pollution:** Impacts of noise; permissible limits of noise pollution, measurement of noise and control of noise pollution.

## Section 6: Transportation Engineering

**Transportation Infrastructure:** Highway alignment and engineering surveys; Geometric design of highways - cross-sectional elements, sight distances, horizontal and vertical alignments; Geometric design of railway track; Airport runway length, taxiway and exit taxiway design.

**Highway Pavements:** Highway materials - desirable properties and quality control tests; Design of bituminous paving mixes; Design factors for flexible and rigid pavements; Design of flexible pavement using IRC: 37-2012; Design of rigid pavements using IRC: 58-2011; Distresses in concrete pavements.

**Traffic Engineering:** Traffic studies on flow, speed, travel time - delay and O-D study, PCU, peak hour factor, parking study, accident study and analysis, statistical analysis of traffic data; Microscopic and macroscopic parameters of traffic flow, fundamental relationships; Control devices, signal design by Webster's method; Types of intersections and channelization; Highway capacity and level of service of rural highways and urban roads.

## Section 7: Geomatics Engineering

Principles of surveying; Errors and their adjustment; Maps - scale, coordinate system; Distance and angle measurement - Levelling and trigonometric levelling; Traversing and triangulation survey; Total station; Horizontal and vertical curves. Photogrammetry - scale, flying height; Remote sensing - basics, platform and sensors, visual image interpretation; Basics of Geographical information system (GIS) and Geographical Positioning system (GPS).



Director

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Dr Pankaj Kumar Singh is PhD in Civil Engineering and M.Tech in the Diversified Engg Stream. He also holds a MBA in Foreign Trade.

Dr Singh is Director Research in R D Engineering College, Ghaziabad.

He also serves as Guest Professor in several countries like Philippines, Qatar etc.

His research area of interest is Environmental Conservation & Sustainability, Biological Waste water treatment, Plant medicine, Crop recognition & monitoring, AI & Modelling and so on.

He wrote 5+ books and book chapter in diversified field.

His work is in the field of Patent and till now published more than 30+ national and International Patent and Granted 10+ National and International Patent along with Professors/Researcher of US, Canada, UK, Russia, Syria, Philippines etc as well as Published many Research Papers in reputed journals like MDPI(SCI), ESCI, ABDC Journal , Scopus , Springer, UGC -Care etc.

He also holds session Chair in many International Conferences in different countries like Las Vegas, New Jersey, Bali, Geneva, George Town (Australia).

After all these achievements, Dr Singh was awarded as **\*Best Research Director in the field of Biological Waste water treatment & Plant Medicine\*** and many more awards

  
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SANJAY PALIWAL is a Renowned Professor in the Mechanical Department at R D Engineering College, Ghaziabad, INDIA.

He has done B.E. & M.Tech. and Published Several Research Papers and National and International Patent to his Credit. He has Attended Several National & International Conferences. He has 5 year Industry & 22 year Teaching Experience.

  
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Duhai, Ghaziabad



GATE CLASSES (2018-19), 6TH SEM STUDENT ATTENDANCE  
CIVIL DEPARTMENT, RDEC GHAZIABAD

DATE: 25/01/2019

Sr. No.	Student Name	Roll No.	Signature
1	ABHIJEET SRIVASTAVA	1623100002	Abhijeet
2	ABHISHEK	1623100003	Abhishek
3	AJAY GAUTAM	1623100005	Ajay
4	AKSHAY	1623100006	Akshay
5	AKSHAY KUMAR	1623100007	Akshay
6	ANKUR KUMAR	1623100009	Ankur
7	DHIRAJ KUMAR YADAV	1623100011	Dhiraj
8	GOURAV	1623100012	Gourav
9	KAMIL	1623100013	Kamil
10	KM KIRAN	1623100014	Kiran
11	MANISH KUMAR	1623100015	Manish
12	MEGHA	1623100016	Megha
13	MOHD NOMAAN SIDDIQUI	1623100017	Md. Noman
14	MONIKA GAUTAM	1623100018	Monika
15	RAJAN TYAGI	1623100021	Rajan
16	SHAQUN TYAGI	1623100024	Shaqun
17	SHERYAB	1623100025	Sherayab
18	SHIVANI	1623100026	Shivani
19	SOHAIL KHAN	1623100027	Sohail
20	SONU KUMAR	1623100028	Sumit
21	SUMIT	1623100029	Sumit
22	VINOD KUMAR	1623100030	Absent
23	WAQUAR YUNUS	1623100031	Absent
24	YASH KUMAR	1623100032	Yash
25	YASH SAXENA	1623100033	Absent
26	PREM KUMAR	1623110082	Prem
27	AADIL	1723100901	Aadil
28	AADIL AHMAD GANIE	1723100902	Aadil
29	AAKASH TYAGI	1723100903	Aakash
30	ABHISHEK GAUTAM	1723100904	Aakash
31	AKASH CHAUDHARY	1723100905	Aakash
32	AKSHAY TYAGI	1723100906	Akash
33	ASMAT JAN	1723100907	Asmat
34	AZEEM KHAN	1723100908	Azeem
35	FARMAN KHAN	1723100909	Absent
36	MD AZEEM IQBAL	1723100911	Dahul
37	RAHUL KUMAR	1723100915	Absent
38	SHEHNAWAZ AHMED	1723100918	Vikas
39	VIKAS KUMAR	1723100919	

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GATE CLASSES (2018-19), 6TH SEM STUDENT ATTENDANCE  
CIVIL DEPARTMENT, RDEC GHAZIABAD

DATE: 11/02/2019

Sr. No.	Student Name	Roll No.	Signature
1	ABHIJEET SRIVASTAVA	1623100002	Abhijeet
2	ABHISHEK	1623100003	Abhishek
3	AJAY GAUTAM	1623100005	Ajay
4	AKSHAY	1623100006	Akshay
5	AKSHAY KUMAR	1623100007	Akshay
6	ANKUR KUMAR	1623100009	Ankur
7	DHIRAJ KUMAR YADAV	1623100011	Dhiraj
8	GOURAV	1623100012	Gourav
9	KAMIL	1623100013	Kamil
10	KM KIRAN	1623100014	Kiran
11	MANISH KUMAR	1623100015	Manish
12	MEGHA	1623100016	Megha
13	MOHD NOMAAN SIDDIQUI	1623100017	Mohd Nomaan
14	MONIKA GAUTAM	1623100018	Monika
15	RAJAN TYAGI	1623100021	Rajan
16	SHAGUN TYAGI	1623100024	Shagun
17	SHERYAB	1623100025	Sheriyab
18	SHIVANI	1623100026	Shivani
19	SOHAİL KHAN	1623100027	Sohaıl
20	SONU KUMAR	1623100028	Sonu
21	SUMIT	1623100029	Sumit
22	VINOD KUMAR	1623100030	Vinod
23	WAQUAR YUNUS	1623100031	Waquar
24	YASH KUMAR	1623100032	Yash
25	YASH SAXENA	1623100033	Yash
26	PREM KUMAR	1623110082	Prem
27	AADIL	1723100901	Aadil
28	AADIL AHMAD GANIE	1723100902	Aadil
29	AAKASH TYAGI	1723100903	Aakash
30	ABHISHEK GAUTAM	1723100904	Abhisek
31	AKASH CHAUDHARY	1723100905	Akash
32	AKSHAY TYAGI	1723100906	Akshay
33	ASMAT JAN	1723100907	Asmat
34	AZEEM KHAN	1723100908	Azeem
35	FARMAN KHAN	1723100909	Farmam
36	MD AZEEM IQBAL	1723100911	Md. Azeem
37	RAHUL KUMAR	1723100915	Rahul
38	SHEHNAWAZ AHMED	1723100918	Shehnawaz
39	VIKAS KUMAR	1723100919	Vikas

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GATE CLASSES (2018-19), 6TH SEM STUDENT ATTENDANCE  
CIVIL DEPARTMENT, RDEC GHAZIABAD

DATE: 8/02/2019

Sr. No.	Student Name	Roll No.	Signature
1	ABHIJEET SRIVASTAVA	1623100002	Abhijeet Absent
2	ABHISHEK	1623100003	Ajay
3	AJAY GAUTAM	1623100005	Akshay
4	AKSHAY	1623100006	Akshay
5	AKSHAY KUMAR	1623100007	Akshay
6	ANKUR KUMAR	1623100009	Ankur
7	DHIRAJ KUMAR YADAV	1623100011	Absent
8	GOURAV	1623100012	Gourav
9	KAMIL	1623100013	Kamil
10	KM KIRAN	1623100014	Absent
11	MANISH KUMAR	1623100015	Manish
12	MEGHA	1623100016	Megha
13	MOHD NOMAAN SIDDIQUI	1623100017	Absent
14	MONIKA GAUTAM	1623100018	Absent
15	RAJAN TYAGI	1623100021	Rajan
16	SHAGUN TYAGI	1623100024	Shagun
17	SHERYAB	1623100025	Sherayab
18	SHIVANI	1623100026	Shivani
19	SOHAIL KHAN	1623100027	Sohail
20	SONU KUMAR	1623100028	Absent
21	SUMIT	1623100029	Sumit
22	VINOD KUMAR	1623100030	Vinod
23	WAQUAR YUNUS	1623100031	Waquar
24	YASH KUMAR	1623100032	Yash
25	YASH SAXENA	1623100033	Absent
26	PREM KUMAR	1623110082	Prem
27	AADIL	1723100901	Aadil
28	AADIL AHMAD GANIE	1723100902	Aadil
29	AAKASH TYAGI	1723100903	Aakash
30	ABHISHEK GAUTAM	1723100904	Absent
31	AKASH CHAUDHARY	1723100905	Akash
32	AKSHAY TYAGI	1723100906	Akshay
33	ASMAT JAN	1723100907	Asmat
34	AZEEM KHAN	1723100908	Azeem
35	FARMAN KHAN	1723100909	Md. Azeem
36	MD. AZEEM IQBAL	1723100911	Azeem
37	RAHUL KUMAR	1723100915	Rahul
38	SHEHNAWAZ AHMED	1723100918	Absent
39	VIKAS KUMAR	1723100919	Vikas

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GATE CLASSES (2018-19), 6TH SEM STUDENT ATTENDANCE  
CIVIL DEPARTMENT, RDEC GHAZIABAD

DATE: 15/02/2019

Sr. No.	Student Name	Roll No.	Signature
1	ABHIJEET SRIVASTAVA	1623100002	Abhijeet AB
2	ABHISHEK	1623100003	
3	AJAY GAUTAM	1623100005	Ajay.
4	AKSHAY	1623100006	Akashay.
5	AKSHAY KUMAR	1623100007	Akshay AB
6	ANKUR KUMAR	1623100009	
7	DHIRAJ KUMAR YADAV	1623100011	Dhiraj
8	GOURAV	1623100012	Gourav
9	KAMIL	1623100013	Kamil
10	KM KIRAN	1623100014	Kiran
11	MANISH KUMAR	1623100015	Manish.
12	MEGHA	1623100016	Megha AB
13	MOHD NOMAAN SIDDIQUI	1623100017	Nomaan
14	MONIKA GAUTAM	1623100018	Monika
15	RAJAN TYAGI	1623100021	Rajan
16	SHAGUN TYAGI	1623100024	Shagun
17	SHERYAB	1623100025	AB
18	SHIVANI	1623100026	Shivani
19	SOHAIL KHAN	1623100027	AB
20	SONU KUMAR	1623100028	
21	SUMIT	1623100029	Sumit
22	VINOD KUMAR	1623100030	Vinod AB
23	WAQUAR YUNUS	1623100031	
24	YASH KUMAR	1623100032	Yash AB
25	YASH SAXENA	1623100033	
26	PREM KUMAR	1623110082	Prem Kumar
27	AADIL	1723100901	Aadil
28	AADIL AHMAD GANIE	1723100902	Aadil
29	AAKASH TYAGI	1723100903	Aakash Tyagi AB
30	ABHISHEK GAUTAM	1723100904	
31	AKASH CHAUDHARY	1723100905	Akash
32	AKSHAY TYAGI	1723100906	Akshay AB
33	ASMAT JAN	1723100907	
34	AZEEM KHAN	1723100908	Azeem.
35	FARMAN KHAN	1723100909	Farmam AB
36	MD AZEEM IQBAL	1723100911	Qahim AB
37	RAHUL KUMAR	1723100915	
38	SHEHNAWAZ AHMED	1723100918	
39	VIKAS KUMAR	1723100919	Vikas AB

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GATE CLASSES (2018-19), 6TH SEM STUDENT ATTENDANCE  
CIVIL DEPARTMENT, RDEC GHAZIABAD

DATE: 29/03/2019

Sr. No.	Student Name	Roll No.	Signature
1	ABHIJEET SRIVASTAVA	1623100002	AB
2	ABHISHEK	1623100003	Abhishek
3	AJAY GAUTAM	1623100005	Ajay
4	AKSHAY	1623100006	Ab
5	AKSHAY KUMAR	1623100007	Akshay
6	ANKUR KUMAR	1623100009	Ankur
7	DHIRAJ KUMAR YADAV	1623100011	DB
8	GOURAV	1623100012	Gourav
9	KAMIL	1623100013	Kamil
10	KM KIRAN	1623100014	AB
11	MANISH KUMAR	1623100015	Manish
12	MEGHA	1623100016	Megha
13	MOHD NOMAAN SIDDIQUI	1623100017	AB
14	MONIKA GAUTAM	1623100018	Monika
15	RAJAN TYAGI	1623100021	Rajan
16	SHAGUN TYAGI	1623100024	Shagun
17	SHERYAB	1623100025	Sheryab
18	SHIVANI	1623100026	AB
19	SOHAIL KHAN	1623100027	Sohail
20	SONU KUMAR	1623100028	Sonu
21	SUMIT	1623100029	Sumit
22	VINOD KUMAR	1623100030	AB
23	WAQUAR YUNUS	1623100031	Waquar
24	YASH KUMAR	1623100032	Yash
25	YASH SAXENA	1623100033	Yash
26	PREM KUMAR	1623110082	AB
27	AADIL	1723100901	Umair
28	AADIL AHMAD GANIE	1723100902	Aadil
29	AAKASH TYAGI	1723100903	Aakash
30	ABHISHEK GAUTAM	1723100904	Abhishek
31	AKASH CHAUDHARY	1723100905	AB
32	AKSHAY TYAGI	1723100906	Akshay
33	ASMAT JAN	1723100907	AB
34	AZEEM KHAN	1723100908	Azeem
35	FARMAN KHAN	1723100909	Farmam
36	MD AZEEM IQBAL	1723100911	AB
37	RAHIL KUMAR	1723100915	Rahul
38	SHEHNAWAZ AHMED	1723100918	AB
39	VIKAS KUMAR	1723100919	Vikas

Director  
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GATE CLASSES (2018-19), 6TH SEM STUDENT ATTENDANCE  
CIVIL DEPARTMENT, RDEC GHAZIABAD

DATE: 10/03/2019

Sr. No.	Student Name	Roll No.	Signature
1	ABHIJEET SRIVASTAVA	1623100002	AbhiJeet
2	ABHISHEK	1623100003	Abhishek
3	AJAY GAUTAM	1623100005	Ajay
4	AKSHAY	1623100006	AKshay
5	AKSHAY KUMAR	1623100007	AKshay Kumar
6	ANKUR KUMAR	1623100009	ANKUR
7	DHIRAJ KUMAR YADAV	1623100011	Dhiraj
8	GOURAV	1623100012	Gourav
9	KAMIL	1623100013	Kamil
10	KM KIRAN	1623100014	km kiran
11	MANISH KUMAR	1623100015	manish
12	MEGHA	1623100016	Megha
13	MOHD NOMAAN SIDDIQUI	1623100017	AB
14	MONIKA GAUTAM	1623100018	Monika
15	RAJAN TYAGI	1623100021	Rajan
16	SHAGUN TYAGI	1623100024	Shagun
17	SHERYAB	1623100025	Sheryab
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30	ABHISHEK GAUTAM	1723100904	Abhishek
31	AKASH CHAUDHARY	1723100905	AB
32	AKSHAY TYAGI	1723100906	Akshay
33	ASMAT JAN	1723100907	Asmat
34	AZEEM KHAN	1723100908	Azeem
35	FARMAN KHAN	1723100909	Farmar
36	MD AZEEM IQBAL	1723100911	AB
37	RAHUL KUMAR	1723100915	Rahul
38	SHEHNAWAZ AHMED	1723100918	Shehnawaz
39	VIKAS KUMAR	1723100919	AB



GATE CLASSES (2018-19), 6TH SEM STUDENT ATTENDANCE  
CIVIL DEPARTMENT, RDEC GHAZIABAD

DATE: 8/03/2019

Sr. No.	Student Name	Roll No.	Signature
1	ABHIJEET SRIVASTAVA	1623100002	AB
2	ABHISHEK	1623100003	Abhishek
3	AJAY GAUTAM	1623100005	Ajay
4	AKSHAY	1623100006	Akshay
5	AKSHAY KUMAR	1623100007	Akshay Kumar
6	ANKUR KUMAR	1623100009	Ankur
7	DHIRAJ KUMAR YADAV	1623100011	AB
8	GOURAV	1623100012	Gourav
9	KAMIL	1623100013	Kamil
10	KM KIRAN	1623100014	AB
11	MANISH KUMAR	1623100015	Manish
12	MEGHA	1623100016	Megha
13	MOHD NOMAAN SIDDIQUI	1623100017	Nomana
14	MONIKA GAUTAM	1623100018	Monika
15	RAJAN TYAGI	1623100021	Rajan
16	SHAGUN TYAGI	1623100024	Shagun
17	SHERYAB	1623100025	AB
18	SHIVANI	1623100026	Shivani
19	SOHAIL KHAN	1623100027	Sohail
20	SONU KUMAR	1623100028	Sonu
21	SUMIT	1623100029	Sumit
22	VINOD KUMAR	1623100030	AB
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24	YASH KUMAR	1623100032	Yash
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28	AADIL AHMAD GANIE	1723100902	Ab
29	AAKASH TYAGI	1723100903	Aakash
30	ABHISHEK GAUTAM	1723100904	Abhishek
31	AKASH CHAUDHARY	1723100905	Akash
32	AKSHAY TYAGI	1723100906	Ab
33	ASMAT JAN	1723100907	Asmat
34	AZEEM KHAN	1723100908	Azeem
35	FARMAN KHAN	1723100909	AB
36	MD AZEEM IQBAL	1723100911	Md. Azeem
37	RAHUL KUMAR	1723100915	Rahul
38	SHEHNAWAZ AHMED	1723100918	Ab
39	VIKAS KUMAR	1723100919	Vikas

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R.D. Engineering College  
Duhai, Ghaziabad



GATE CLASSES (2018-19), 6TH SEM STUDENT ATTENDANCE  
CIVIL DEPARTMENT, RDEC GHAZIABAD

DATE: 15/03/2019

Sr. No.	Student Name	Roll No.	Signature
1	ABHIJEET SRIVASTAVA	1623100002	AB Abhijeet
2	ABHISHEK	1623100003	AB Abhishek
3	AJAY GAUTAM	1623100005	AB Ajay
4	AKSHAY	1623100006	AB Akshay
5	AKSHAY KUMAR	1623100007	AB Akshay Kumar
6	ANKUR KUMAR	1623100009	AB Ankur
7	DHIRAJ KUMAR YADAV	1623100011	AB Dhiraj Kumar
8	GOURAV	1623100012	AB Gourav
9	KAMIL	1623100013	AB Kamil
10	KM KIRAN	1623100014	AB Kiran
11	MANISH KUMAR	1623100015	AB Manish
12	MEGHA	1623100016	AB Megha
13	MOHD NOMAAN SIDDIQUI	1623100017	AB Nomaan
14	MONIKA GAUTAM	1623100018	AB Monika
15	RAJAN TYAGI	1623100021	AB Rajan
16	SHAGUN TYAGI	1623100024	AB Shagun
17	SHERYAB	1623100025	AB Sherayab
18	SHIVANI	1623100026	AB Shivani
19	SOHAIL KHAN	1623100027	AB Sohail Khan
20	SONU KUMAR	1623100028	AB Sonu Kumar
21	SUMIT	1623100029	AB Sumit
22	VINOD KUMAR	1623100030	AB Vinod
23	WAQUAR YUNUS	1623100031	AB Waquar
24	YASH KUMAR	1623100032	AB Yash
25	YASH SAXENA	1623100033	AB Yash Saxena
26	PREM KUMAR	1623110082	AB Prem
27	AADIL	1723100901	AB Aadil
28	AADIL AHMAD GANIE	1723100902	AB Aadil Ganie
29	AAKASH TYAGI	1723100903	AB Akash Tyagi
30	ABHISHEK GAUTAM	1723100904	AB Abhishek Gautam
31	AKASH CHAUDHARY	1723100905	AB Akash Chaudhary
32	AKSHAY TYAGI	1723100906	AB Akshay Tyagi
33	ASMAT JAN	1723100907	AB Asmat Jan
34	AZEEM KHAN	1723100908	AB Azeem Khan
35	FARMAN KHAN	1723100909	AB Farmal Khan
36	MD AZEEM IQBAL	1723100911	AB Md. Azeem Iqbal
37	RAHUL KUMAR	1723100915	AB Rahul Kumar
38	SHEHNAWAZ AHMED	1723100918	AB Shehnawaz Ahmed
39	VIKAS KUMAR	1723100919	AB Vikas Kumar

Director  
R.D. Engineering College  
Duhai, Ghaziabad



GATE CLASSES (2018-19), 6TH SEM STUDENT ATTENDANCE  
CIVIL DEPARTMENT, RDEC GHAZIABAD

DATE: 29/03/2019

Sr. No.	Student Name	Roll No.	Signature
1	ABHIJEET SRIVASTAVA	1623100002	AB Abhi Jeet Srivastava
2	ABHISHEK	1623100003	AB Abhishek
3	AJAY GAUTAM	1623100005	AB Ajay Gautam
4	AKSHAY	1623100006	AB Akshay
5	AKSHAY KUMAR	1623100007	AB Akshay Kumar
6	ANKUR KUMAR	1623100009	AB Ankur Kumar
7	DHIRAJ KUMAR YADAV	1623100011	AB Dhiraj Kumar
8	GOURAV	1623100012	AB Gourav
9	KAMIL	1623100013	AB Kamil
10	KM KIRAN	1623100014	AB Kiran
11	MANISH KUMAR	1623100015	AB Manish Kumar
12	MEGHA	1623100016	AB Megha
13	MOHD NOMAAN SIDDIQUI	1623100017	AB Nomaan Siddiqui
14	MONIKA GAUTAM	1623100018	AB Monika Gautam
15	RAJAN TYAGI	1623100021	AB Rajan Tyagi
16	SHAGUN TYAGI	1623100024	AB Shagun Tyagi
17	SHERYAB	1623100025	AB Sherayab
18	SHIVANI	1623100026	AB Shivani
19	SOHAIL KHAN	1623100027	AB Sohail Khan
20	SONU KUMAR	1623100028	AB Sonu Kumar
21	SUMIT	1623100029	AB Sumit
22	VINOD KUMAR	1623100030	AB Vinod Kumar
23	WAQUAR YUNUS	1623100031	AB Waquar Yunus
24	YASH KUMAR	1623100032	AB Yash Kumar
25	YASH SAXENA	1623100033	AB Yash Saxena
26	PREM KUMAR	1623110082	AB Prem Kumar
27	AADIL	1723100901	AB Aadil
28	AADIL AHMAD GANIE	1723100902	AB Aadil Ahmad Ganie
29	AAKASH TYAGI	1723100903	AB Akash Tyagi
30	ABHISHEK GAUTAM	1723100904	AB Abhishek Gautam
31	AKASH CHAUDHARY	1723100905	AB Akash Chaudhary
32	AKSHAY TYAGI	1723100906	AB Akshay Tyagi
33	ASMAT JAN	1723100907	AB Asmat Jan
34	AZEEM KHAN	1723100908	AB Azeem Khan
35	FARMAN KHAN	1723100909	AB Farmam Khan
36	MD AZEEM IQBAL	1723100911	AB Md Azeem Iqbal
37	RAHUL KUMAR	1723100915	AB Rahul Kumar
38	SHEHNAWAZ AHMED	1723100918	AB Shehnawaz Ahmed
39	VIKAS KUMAR	1723100919	AB Vikas Kumar

Director  
R.D. Engineering College  
Duhai, Ghaziabad



GATE CLASSES (2018-19), 6TH SEM STUDENT ATTENDANCE  
CIVIL DEPARTMENT, RDEC GHAZIABAD

DATE: 29/03/2019

Sr. No.	Student Name	Roll No.	Signature
1	ABHIJEET SRIVASTAVA	1623100002	AB
2	ABHISHEK	1623100003	AB
3	AJAY GAUTAM	1623100005	Ajay
4	AKSHAY	1623100006	Akshay
5	AKSHAY KUMAR	1623100007	AB
6	ANKUR KUMAR	1623100009	Ankur
7	DHIRAJ KUMAR YADAV	1623100011	Dhiraj
8	GOURAV	1623100012	AB
9	KAMIL	1623100013	Kamil
10	KM KIRAN	1623100014	Kiran
11	MANISH KUMAR	1623100015	AB
12	MEGHA	1623100016	Megha
13	MOHD NOMAAN SIDDIQUI	1623100017	AB
14	MONIKA GAUTAM	1623100018	Monika
15	RAJAN TYAGI	1623100021	AB
16	SHAGUN TYAGI	1623100024	Shagun
17	SHERYAB	1623100025	AB
18	SHIVANI	1623100026	Shivani
19	SOHAIL KHAN	1623100027	Sohail
20	SONU KUMAR	1623100028	Sonu
21	SUMIT	1623100029	Sumit
22	VINOD KUMAR	1623100030	Vinod
23	WAQUAR YUNUS	1623100031	AB
24	YASH KUMAR	1623100032	Yash
25	YASH SAXENA	1623100033	AB
26	PREM KUMAR	1623110082	Prem
27	AADIL	1723100901	Aadil
28	AADIL AHMAD GANIE	1723100902	AB
29	AAKASH TYAGI	1723100903	AB
30	ABHISHEK GAUTAM	1723100904	AB
31	AKASH CHAUDHARY	1723100905	Abu
32	AKSHAY TYAGI	1723100906	Abu
33	ASMAT JAN	1723100907	Asmat
34	AZEEM KHAN	1723100908	AB
35	FARMAN KHAN	1723100909	Farmam
36	MD AZEEM IQBAL	1723100911	AB
37	RAHUL KUMAR	1723100915	Rahul
38	SHEHNAWAZ AHMED	1723100918	AB
39	VIKAS KUMAR	1723100919	Vikas

Director  
R.D. Engineering College  
Duhai, Ghaziabad



GATE CLASSES (2018-19), 6TH SEM STUDENT ATTENDANCE  
CIVIL DEPARTMENT, RDEC GHAZIABAD

DATE: 5/12/2019

Sr. No.	Student Name	Roll No.	Signature
1	ABHIJEET SRIVASTAVA	1623100002	AB Abhijeet
2	ABHISHEK	1623100003	AB Abhishek
3	AJAY GAUTAM	1623100005	AB Ajay
4	AKSHAY	1623100006	AB Akshay
5	AKSHAY KUMAR	1623100007	AB Akshay Kumar
6	ANKUR KUMAR	1623100009	AB Ankur
7	DHIRAJ KUMAR YADAV	1623100011	AB Dhiraj
8	GOURAV	1623100012	AB Gourav
9	KAMIL	1623100013	AB Kamil
10	KM KIRAN	1623100014	AB Kiran
11	MANISH KUMAR	1623100015	AB Manish
12	MEGHA	1623100016	AB Megha
13	MOHD NOMAAN SIDDIQUI	1623100017	AB Nomaan
14	MONIKA GAUTAM	1623100018	AB Monika
15	RAJAN TYAGI	1623100021	AB Rajan
16	SHAGUN TYAGI	1623100024	AB Shagun
17	SHERYAB	1623100025	AB Sherayab
18	SHIVANI	1623100026	AB Shivani
19	SOHAIL KHAN	1623100027	AB Sohail
20	SONU KUMAR	1623100028	AB Sonu
21	SUMIT	1623100029	AB Sumit
22	VINOD KUMAR	1623100030	AB Vinod
23	WAQUAR YUNUS	1623100031	AB Waquar
24	YASH KUMAR	1623100032	AB Yash
25	YASH SAXENA	1623100033	AB Yash
26	PREM KUMAR	1623110082	AB Prem
27	AADIL	1723100901	AB Adil
28	AADIL AHMAD GANIE	1723100902	AB Adil
29	AAKASH TYAGI	1723100903	AB Akash
30	ABHISHEK GAUTAM	1723100904	AB Abhishek
31	AKASH CHAUDHARY	1723100905	AB Akash
32	AKSHAY TYAGI	1723100906	AB Akash
33	ASMAT JAN	1723100907	AB Asmat
34	AZEEM KHAN	1723100908	AB Azeem
35	FARMAN KHAN	1723100909	AB Farmam
36	MD AZEEM IQBAL	1723100911	AB Md Azeem
37	RAHUL KUMAR	1723100915	AB Rahul
38	SHEHNAWAZ AHMED	1723100918	AB Shehnawaz
39	VIKAS KUMAR	1723100919	AB Vikas

Director:  
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Duhai, Ghaziabad



GATE CLASSES (2018-19), 6TH SEM STUDENT ATTENDANCE  
CIVIL DEPARTMENT, RDEC GHAZIABAD

DATE: 12/04/2019

Sr. No.	Student Name	Roll No.	Signature
1	ABHIJEET SRIVASTAVA	1623100002	AB
2	ABHISHEK	1623100003	AB
3	AJAY GAUTAM	1623100005	Ajay AB
4	AKSHAY	1623100006	Akshay AB
5	AKSHAY KUMAR	1623100007	AB
6	ANKUR KUMAR	1623100009	Dhirony AB
7	DHIRAJ KUMAR YADAV	1623100011	Dhirony AB
8	GOURAV	1623100012	Gourav AB
9	KAMIL	1623100013	AB
10	KM KIRAN	1623100014	Mamishi AB
11	MANISH KUMAR	1623100015	AB
12	MEGHA	1623100016	AB
13	MOHD NOMAAN SIDDIQUI	1623100017	AB
14	MONIKA GAUTAM	1623100018	Monika Rajan AB
15	RAJAN TYAGI	1623100021	Shagun AB
16	SHAGUN TYAGI	1623100024	Shagun AB
17	SHERYAB	1623100025	Shervani AB
18	SHIVANI	1623100026	Shivani AB
19	SOHAİL KHAN	1623100027	AB
20	SONU KUMAR	1623100028	Q Sumit AB
21	SUMIT	1623100029	AB
22	VINOD KUMAR	1623100030	Vinod Kumar AB
23	WAQUAR YUNUS	1623100031	Yash AB
24	YASH KUMAR	1623100032	Yash AB
25	YASH SAXENA	1623100033	AB
26	PREM KUMAR	1623110082	P Kumar AB
27	AADIL	1723100901	Aadil AB
28	AADIL AHMAD GANIE	1723100902	AB
29	AAKASH TYAGI	1723100903	AB
30	ABHISHEK GAUTAM	1723100904	Akash AB
31	AKASH CHAUDHARY	1723100905	AB
32	AKSHAY TYAGI	1723100906	Asmat Jan AB
33	ASMAT JAN	1723100907	AB
34	AZEEM KHAN	1723100908	Farman AB
35	FARMAN KHAN	1723100909	Farman AB
36	MD AZEEM IQBAL	1723100911	Rahul AB
37	RAHUL KUMAR	1723100915	AB
38	SHEHNAWAZ AHMED	1723100918	Vikas AB
39	VIKAS KUMAR	1723100919	AB



GATE CLASSES (2018-19), 6TH SEM STUDENT ATTENDANCE  
CIVIL DEPARTMENT, RDEC GHAZIABAD

DATE: 19/04/2019

Sr. No.	Student Name	Roll No.	Signature
1	ABHIJEET SRIVASTAVA	1623100002	AbhiJeet
2	ABHISHEK	1623100003	Abhishek
3	AJAY GAUTAM	1623100005	Ajay AB
4	AKSHAY	1623100006	Akshay AB
5	AKSHAY KUMAR	1623100007	AKSHAY KUMAR AB
6	ANKUR KUMAR	1623100009	Ankur AB
7	DHIRAJ KUMAR YADAV	1623100011	Dhiraj AB
8	GOURAV	1623100012	Gourav AB
9	KAMIL	1623100013	Kamil AB
10	KM KIRAN	1623100014	Kiran AB
11	MANISH KUMAR	1623100015	Manish AB
12	MEGHA	1623100016	Megha AB
13	MOHD NOMAAN SIDDIQUI	1623100017	Mohaan AB
14	MONIKA GAUTAM	1623100018	Monika AB
15	RAJAN TYAGI	1623100021	Rajan AB
16	SHAGUN TYAGI	1623100024	Shagun AB
17	SHERYAB	1623100025	Sherayab AB
18	SHIVANI	1623100026	Shivani AB
19	SOHAIL KHAN	1623100027	Sohail AB
20	SONU KUMAR	1623100028	Sonu AB
21	SUMIT	1623100029	Sumit AB
22	VINOD KUMAR	1623100030	Vinod AB
23	WAQUAR YUNUS	1623100031	Waquar AB
24	YASH KUMAR	1623100032	Yash AB
25	YASH SAXENA	1623100033	Yash SAXENA AB
26	PREM KUMAR	1623110082	Prem Kumar AB
27	AADIL	1723100901	Aadil AB
28	AADIL AHMAD GANIE	1723100902	Aadil AHMAD GANIE AB
29	AAKASH TYAGI	1723100903	Aakash AB
30	ABHISHEK GAUTAM	1723100904	Abhishek AB
31	AKASH CHAUDHARY	1723100905	Akash Chaudhary AB
32	AKSHAY TYAGI	1723100906	Akshay TYAGI AB
33	ASMAT JAN	1723100907	Asmat Jan AB
34	AZEEM KHAN	1723100908	Azeem Khan AB
35	FARMAN KHAN	1723100909	Farmar Khan AB
36	MD AZEEM IQBAL	1723100911	MD Azeem IQBAL AB
37	RAHUL KUMAR	1723100915	Rahul Kumar AB
38	SHEHNAWAZ AHMED	1723100918	Shehnawaz Ahmed AB
39	VIKAS KUMAR	1723100919	Vikas Kumar AB

Director  
R.D. Engineering College  
Dutial, Ghaziabad





AICTE ID: 1-3548321

College Code: 231

# R. D. ENGINEERING COLLEGE

Approved by AICTE New Delhi & Affiliated to Dr. APJ Abdul Kalam Technical University, Lucknow  
under the aegis of IQAC

## Department of Electronics and Communication Engineering

Date:02.09.2018

### Notice

**Dear ECE V semester students,**

We are excited to announce the commencement of special classes for the preparation of the Graduate Aptitude Test in Engineering (GATE). The GATE exam is a gateway to some of the most prestigious postgraduate programs and job opportunities in the field of engineering.

**Classes Details:**

**Commencement Date: 14 Sep 2018**

**Venue: C Block Room No. C 201**

Mr. Vishal Upmanu  
(HOD-ECE)

Director  
R.D. Engineering College  
Duhai, Ghaziabad

CC to:

- Director, RDEC
- Coordinator, IQAC
- Dean Academics
- Departmental Notice Board



AICTE ID: 1-3548321

College Code: 231

# R. D. ENGINEERING COLLEGE

Approved by AICTE New Delhi & Affiliated to Dr. APJ Abdul Kalam Technical University, Lucknow  
under the aegis of IQAC

## Department of Electronics and Communication Engineering

### Faculty Profile



Mr. Prabhash Singh is a Renowned Assistant Professor in the field of Electronics and Communication Engineering department at RD engineering college Ghaziabad.

He has done B.Tech, M.Tech. He has published several research papers in national and international journals and he has several patents.

He has more than 14 years of teaching experience.

  
Director  
R.D. Engineering College  
Duhai, Ghaziabad

**R D Engineering College, Ghaziabad**  
**GATE CLASSES for B. Tech (ECE-V Sem) Session 2018-19**

**Attendance Sheet**

SN	Roll No.	Student's Name	14-09-2018	21-09-2018	28-09-2018	04-10-2018	11-10-2018	18-10-2018	25-10-2018	01-11-2018	08-11-2018	15-11-2018
1	1623131001	Amit Kumar	Amit									
2	1623131002	Anand Kumar	Anand									
3	1623131003	Aniket Sharma	Aniket									
4	1623131004	Anuj Rath	Anuj									
5	1623131005	Ashish	Ashish	Ashish	Ashish	Ashish	Ashish	Ashish	Ashish	Ashish	Ashish	Ashish
6	1623131006	Chanchal	Chanchal	Chanchal	Chanchal	Chanchal	Chanchal	Chanchal	Chanchal	Chanchal	Chanchal	Chanchal
7	1623131007	Deepanshu Tyagi	D.P.									
8	1623131008	Devanshu Singh	D.S.									
9	1623131009	Harsh Verma	Hark									
10	1623131010	Kajal Tyagi	Kajal									
11	1623131011	Geeta Rani	Geeta									
12	1623131012	Mamta Jha	Mamta									
13	1623131014	Kuldeep Garg	Kuldeep									
14	1623131016	Mansi	Mansi	Mansi	Mansi	Mansi	Mansi	Mansi	Mansi	Mansi	Mansi	Mansi
15	1623131017	Mohit Khan	Mohit									
16	1623131018	Nitin	Nitin	Nitin	Nitin	Nitin	Nitin	Nitin	Nitin	Nitin	Nitin	Nitin
17	1623131020	Pooja	Pooja	Pooja	Pooja	Pooja	Pooja	Pooja	Pooja	Pooja	Pooja	Pooja
18	1623131021	Pradyumna Katare	Pradyumna	Pradyumna	Pradyumna	Pradyumna	Pradyumna	Pradyumna	Pradyumna	Pradyumna	Pradyumna	Pradyumna
19	1623131022	Prashant Kumar	Prashant									
20	1623131023	Rachit Kumar	Rachit									
21	1623131024	Raghav Goyal	Raghav									
22	1623131027	Rohan Yadav	Rohan									
23	1623131028	Sameer Kumar	Sameer									
24	1623131029	Sandeep Kr Shah	S.K.S.									
25	1623131030	Sanjay Kashyap	Sanjay									
26	1623131031	Sakshi	Sakshi	Sakshi	Sakshi	Sakshi	Sakshi	Sakshi	Sakshi	Sakshi	Sakshi	Sakshi
27	1623131032	Shivam Kumar	Shivam									
28	1623131033	Shivani Sharma	Shivani									
29	1623131034	Shubham Sharma	Shubham									
30	1623131035	Shubham Tyagi	T.K.									
31	1623131037	Tarun Kumar	T.K.									
32	1723131901	Nisha Sharma	Nisha									

Mr. Prabhash Singh  
Program Coordinator

R.D. Director  
Engineering College  
Duhai, Ghaziabad

**Section 1: Engineering Mathematics**

Linear Algebra: Vector space, basis, linear dependence and independence, matrix algebra, eigen values and eigen vectors, rank, solution of linear equations – existence and uniqueness.

Calculus: Mean value theorems, theorems of integral calculus, evaluation of definite and improper integrals, partial derivatives, maxima and minima, multiple integrals, line, surface and volume integrals, Taylor series.

Differential Equations: First order equations (linear and nonlinear), higher order linear differential equations, Cauchy's and Euler's equations, methods of solution using variation of parameters, complementary function and particular integral, partial differential equations, variable separable method, initial and boundary value problems.

Vector Analysis: Vectors in plane and space, vector operations, gradient, divergence and curl, Gauss's, Green's and Stoke's theorems.

Complex Analysis: Analytic functions, Cauchy's integral theorem, Cauchy's integral formula; Taylor's and Laurent's series, residue theorem.

Numerical Methods: Solution of nonlinear equations, single and multi-step methods for differential equations, convergence criteria.

Probability and Statistics: Mean, median, mode and standard deviation; combinatorial probability, probability distribution functions - binomial, Poisson, exponential and normal; Joint and conditional probability; Correlation and regression analysis.

**Section 2: Networks, Signals and Systems**

Network solution methods: nodal and mesh analysis; Network theorems: superposition, Thevenin and Norton's, maximum power transfer; Wye-Delta transformation; Steady state sinusoidal analysis using phasors; Time domain analysis of simple linear circuits; Solution of network equations using Laplace transform; Frequency domain analysis of RLC circuits; Linear 2-port network parameters: driving point and transfer functions; State equations for networks.

Continuous-time signals: Fourier series and Fourier transform representations, sampling theorem and applications; Discrete-time signals: discrete-time Fourier transform (DTFT), DFT, FFT, Z-transform, interpolation of discrete-time signals; LTI systems: definition and properties, causality, stability, impulse response, convolution, poles and zeros, parallel and cascade structure, frequency response, group delay, phase delay, digital filter design techniques.

**Section 3: Electronic Devices**

Energy bands in intrinsic and extrinsic silicon; Carrier transport: diffusion current, drift current, mobility and resistivity; Generation and recombination of carriers; Poisson and continuity equations; P-N junction, Zener diode, BJT, MOS capacitor, MOSFET, LED, photo diode and solar cell; Integrated circuit fabrication process: oxidation, diffusion, ion implantation, photolithography and twin-tub CMOS process.

## **Section 4: Analog Circuits**

Small signal equivalent circuits of diodes, BJTs and MOSFETs; Simple diode circuits: clipping, clamping and rectifiers; Single-stage BJT and MOSFET amplifiers; biasing, bias stability, mid-frequency small signal analysis and frequency response; BJT and MOSFET amplifiers: multi-stage, differential, feedback, power and operational; Simple op-amp circuits; Active filters; Sinusoidal oscillators: criterion for oscillation, single-transistor and op-amp configurations; Function generators, wave-shaping circuits and 555 timers; Voltage reference circuits; Power supplies: ripple removal and regulation.

## **Section 5: Digital Circuits**

Number systems; Combinatorial circuits: Boolean algebra, minimization of functions using Boolean identities and Karnaugh map, logic gates and their static CMOS implementations, arithmetic circuits, code converters, multiplexers, decoders and PLAs; Sequential circuits: latches and flip-flops, counters, shift-registers and finite state machines; Data converters: sample and hold circuits, ADCs and DACs; Semiconductor memories: ROM, SRAM, DRAM; 8-bit microprocessor (8085): architecture, programming, memory and I/O interfacing.

## **Section 6: Control Systems**

Basic control system components; Feedback principle; Transfer function; Block diagram representation; Signal flow graph; Transient and steady-state analysis of LTI systems; Frequency response: Routh-Hurwitz and Nyquist stability criteria; Bode and root-locus plots; Lag, lead and lag-lead compensation; State variable model and solution of state equation of LTI systems.

## **Section 7: Communications**

Random processes: autocorrelation and power spectral density, properties of white noise, filtering of random signals through LTI systems; Analog communications: amplitude modulation and demodulation, angle modulation and demodulation, spectra of AM and FM, superheterodyne receivers, circuits for analog communications; Information theory: entropy, mutual information and channel capacity theorem; Digital communications: PCM, DPCM, digital modulation schemes, amplitude, phase and frequency shift keying (ASK, PSK, FSK), QAM, MAP and ML decoding, matched filter receiver, calculation of bandwidth, SNR and BER for digital modulation; Fundamentals of error correction, Hamming codes; Timing and frequency synchronization, inter-symbol interference and its mitigation; Basics of TDMA, FDMA and CDMA.

## **Section 8: Electromagnetics**

Electrostatics; Maxwell's equations: differential and integral forms and their interpretation, boundary conditions, wave equation, Poynting vector; Plane waves and properties: reflection and refraction, polarization, phase and group velocity, propagation through various media, skin depth; Transmission lines: equations, characteristic impedance, impedance matching, impedance transformation, S-parameters, Smith chart; Waveguides: modes, boundary conditions, cut-off frequencies, dispersion relations; Antennas: antenna types, radiation pattern, gain and directivity, return loss, antenna arrays; Basics of radar; Light propagation in optical fibers,

*R.D. Engineering College  
Duhai, Ghaziabad*



AICTE ID: 1-3548321

College Code: 231

# R.D. ENGINEERING COLLEGE

Approved by AICTE New Delhi & Affiliated to Dr. APJ Abdul Kalam Technical University, Lucknow  
under the aegis of IQAC

Date: 08/09/2018

## DEPARTMENT OF MECHANICAL ENGINEERING

### NOTICE

Dear ME Vth semester students,

We are excited to announce the commencement of special classes for the preparation of the Graduate Aptitude Test in Engineering (GATE). The GATE exam is a gateway to some of the most prestigious postgraduate programs and job opportunities in the field of engineering.

**Class Details:**

Commencement Date: 15Sep 2018  
Venue: C Block Room No. C 205

Sincerely,  
Prof. Sanjay Palwal  
(HOD, ME)



CC:  
Director  
IQAC  
Dean Academics  
Departmental Notice Board

  
Director  
R.D. Engineering College  
Duhai, Ghaziabad



SANJAY PALIWAL is a Renowned Professor in the Mechanical Department at R D Engineering College, Ghaziabad, INDIA.

He has done B.E. & M.Tech. and Published Several Research Papers and National and International Patent to his Credit. He has Attended Several National & International Conferences. He has 5 year Industry & 21 year Teaching Experience.



  
Director  
R.D. Engineering College  
Duhai, Ghaziabad

### **Section 1: Engineering Mathematics**

**Linear Algebra:** Matrix algebra, systems of linear equations, eigenvalues and eigenvectors.

**Calculus:** Functions of single variable, limit, continuity and differentiability, mean value theorems, indeterminate forms; evaluation of definite and improper integrals; double and triple integrals; partial derivatives, total derivative, Taylor series (in one and two variables), maxima and minima, Fourier series; gradient, divergence and curl, vector identities, directional derivatives, line, surface and volume integrals, applications of Gauss, Stokes and Green's theorems.

**Differential Equations:** First order equations (linear and nonlinear); higher order linear differential equations with constant coefficients; Euler-Cauchy equation; initial and boundary value problems; Laplace transforms; solutions of heat, wave and Laplace's equations.

**Complex Variables:** Analytic functions; Cauchy-Riemann equations; Cauchy's integral theorem and integral formula; Taylor and Laurent series.

**Probability and Statistics:** Definitions of probability, sampling theorems, conditional probability; mean, median, mode and standard deviation; random variables, binomial, Poisson and normal distributions.

**Numerical Methods:** Numerical solutions of linear and non-linear algebraic equations; integration by trapezoidal and Simpson's rules; single and multi-step methods for differential equations.

### **Section 2: Applied Mechanics and Design**

**Engineering Mechanics:** Free-body diagrams and equilibrium; friction and its applications including rolling friction, belt-pulley, brakes, clutches, screw jack, wedge, vehicles, etc.; trusses and frames; virtual work; kinematics and dynamics of rigid bodies in plane motion; impulse and momentum (linear and angular) and energy formulations; Lagrange's equation.

**Mechanics of Materials:** Stress and strain, elastic constants, Poisson's ratio; Mohr's circle for plane stress and plane strain; thin cylinders; shear force and bending moment diagrams; bending and shear stresses; concept of shear centre; deflection of beams; torsion of circular shafts; Euler's theory of columns; energy methods; thermal stresses; strain gauges and rosettes; testing of materials with universal testing machine; testing of hardness and impact strength.

**Theory of Machines:** Displacement, velocity and acceleration analysis of plane mechanisms; dynamic analysis of linkages; cams; gears and gear trains; flywheels and governors; balancing of reciprocating and rotating masses; gyroscope.

**Vibrations:** Free and forced vibration of single degree of freedom systems, effect of damping; vibration isolation; resonance; critical speeds of shafts.

**Machine Design:** Design for static and dynamic loading; failure theories; fatigue strength and the S-N diagram; principles of the design of machine elements such as bolted, riveted and welded joints; shafts, gears, rolling and sliding contact bearings, brakes and clutches, springs.



  
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### **Section 3: Fluid Mechanics and Thermal Sciences**

Fluid Mechanics: Fluid properties; fluid statics, forces on submerged bodies, stability of floating bodies; control-volume analysis of mass, momentum and energy; fluid acceleration; differential equations of continuity and momentum; Bernoulli's equation; dimensional analysis; viscous flow of incompressible fluids, boundary layer, elementary turbulent flow, flow through pipes, head losses in pipes, bends and fittings; basics of compressible fluid flow.

Heat-Transfer: Modes of heat transfer; one dimensional heat conduction, resistance concept and electrical analogy, heat transfer through fins; unsteady heat conduction, lumped parameter system, Heisler's charts; thermal boundary layer, dimensionless parameters in free and forced convective heat transfer, heat transfer correlations for flow over flat plates and through pipes, effect of turbulence; heat exchanger performance, LMTD and NTU methods; radiative heat transfer, Stefan-Boltzmann law, Wien's displacement law, black and grey surfaces, view factors, radiation network analysis

Thermodynamics: Thermodynamic systems and processes; properties of pure substances, behavior of ideal and real gases; zeroth and first laws of thermodynamics, calculation of work and heat in various processes; second law of thermodynamics; thermodynamic property charts and tables, availability and irreversibility; thermodynamic relations.

Applications: *Power Engineering*: Air and gas compressors; vapour and gas power cycles, concepts of regeneration and reheat. *I.C. Engines*: Air-standard Otto, Diesel and dual cycles. *Refrigeration and air-conditioning*: Vapour and gas refrigeration and heat pump cycles; properties of moist air, psychrometric chart, basic psychrometric processes. *Turbomachinery*: Impulse and reaction principles, velocity diagrams, Pelton-wheel, Francis and Kaplan turbines; steam and gas turbines.

### **Section 4: Materials, Manufacturing and Industrial Engineering**

Engineering Materials: Structure and properties of engineering materials, phase diagrams, heat treatment, stress-strain diagrams for engineering materials.

Casting, Forming and Joining Processes: Different types of castings, design of patterns, moulds and cores; solidification and cooling; riser and gating design. Plastic deformation and yield criteria; fundamentals of hot and cold working processes; load estimation for bulk (forging, rolling, extrusion, drawing) and sheet (shearing, deep drawing, bending) metal forming processes; principles of powder metallurgy. Principles of welding, brazing, soldering and adhesive bonding.

Machining and Machine Tool Operations: Mechanics of machining; basic machine tools; single and multi-point cutting tools, tool geometry and materials, tool life and wear; economics of machining; principles of non-traditional machining processes; principles of work holding, jigs and fixtures; abrasive machining processes; NC/CNC machines and CNC programming.

Metrology and Inspection: Limits, fits and tolerances; linear and angular measurements; comparators; Interferometry; form and finish measurement; alignment and testing methods; tolerance analysis in manufacturing and assembly; concepts of coordinate-measuring machine (CMM).

Computer Integrated Manufacturing: Basic concepts of CAD/CAM and their integration tools; additive manufacturing.



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Production Planning and Control: Forecasting models, aggregate production planning, scheduling, materials requirement planning; lean manufacturing.

Inventory Control: Deterministic models; safety stock inventory control systems.

Operations Research: Linear programming, simplex method, transportation, assignment, network flow models, simple queuing models, PERT and CPM.



S.N.	Roll No.	Name	18-09-2021	25-09-2021	09-10-2021	16-10-2021	23-10-2021	30-10-2021	06-11-2021	13-11-2021	20-11-2021	27-11-2021	04-12-2021	
1	190231040001	AAQIB JAVED	AB	AB										
2	190231040004	BHUPENDER KUMAR	AB	AB										
3	190231040005	DEEPAK KUMAR	AB	AB										
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6	190231040009	GAJENDRA KUMAR	AB	AB										
7	190231040011	GAURAV BHISHT	AB	AB										
8	190231040013	HEMANT KUMAR	AB	AB										
9	190231040014	KAPIL KUMAR	AB	AB										
10	190231040015	KM POOJA YADAV	AB	AB										
11	190231040016	MANISH SINGH	AB	AB										
12	190231040017	NIKHIL KUMAR	AB	AB										
13	190231040018	PRAVATHAM	AB	AB										
14	190231040023	ROHIT KUMAR	AB	AB										
15	190231040024	SHIVAM	AB	AB										
16	190231040025	SHIVAM RATHAUR	AB	AB										
17	190231040025	SHIVAM SHARMA	AB	AB										
18	190231040027	SONU KUMAR	AB	AB										
19	190231040029	SUNIL KUMAR	AB	AB										
20	190231040030	VINEET KUMAR	AB	AB										
21	190231040031	VISHAL KUMAR	AB	AB										
22	200231040001	AASHISH	AB	AB										
23	200231040003	MD CHAND ALAM	AB	AB										
24	200231040005	RAHUL	AB	AB										
25	200231040006	SHIVAM TYAGI	AB	AB										
26	200231040007	TUSHAR SINGH	AB	AB										
27	200231040008	UJJWAL GUPTA	AB	AB										
28	1823110081	RAHUL KUMAR	AB	AB										
29	1823140004	AKSHAY UPADHYAY	AB	AB										
30	1823140008	AMARENDR KUMAR	AB	AB										
31	1823140009	ANIRUDH KUSHWAHA	AB	AB										
32	1823140011	ANOOP KUMAR SINGH	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB	AB
33	1823140012	ASHAD ULLAH	AB	AB										
34	1823140013	BHARAT KUMAR	AB	AB										
35	1823140022	KUNDAN PRASAD	AB	AB										



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