



GOVERNMENT  
COLLEGE OF  
ENGINEERING,  
KEONJHAR

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# TESTING AND CONSULTANCY INFORMATION BROCHURE

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## **ABOUT GCE, KEONJHAR**

**Government College of Engineering, Keonjhar is the only Government College providing Engineering and Technical education in North Odisha. Government College of Engineering, Keonjhar was established in year 1995, having Mining Engineering as the only branch to cater the need of the local Mining and Mineral Industries.**

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**Subsequently other branches of Engineering were added and presently the institute offers under graduate courses in seven disciplines i.e. Mining Engineering, Mechanical Engineering, Electrical Engineering, Metallurgical & Materials Engineering, Mineral Engineering, Civil Engineering and Computer Science & Engineering.**





# MINING ENGINEERING



The Department was established in the year 1995 and has been in the forefront of mining education, research and consultancy services in Odisha. The Department has well qualified faculty and staff dedicated to applied research in the field of Rock Mechanics, Rock Excavation Engineering, Slope Stability, Mine Mechanization, Machine Health Monitoring, Mine Planning, Waste Management, Geo- statistics, Mine Surveying etc. The Department has also excellent computing facilities with the state-of-the-art software like SURPAC, WipFrag, JK Bench.







# MINING ENGINEERING



Sl. No.	Testing Facility	Available Equipment
1	Coring, cutting and polishing of rock and coal	Core Drilling, Cutting & Polishing Machine
2	Compressive Strength, Tensile Strength of Rock, Coal and Composite material, Determination of Rock and Coal	Servo Controlled Rock Testing Machine (3000 kN), Compression Testing Machine (2000 kN), Rock Tri-axial Testing Equipment.
3	Permeability of Soil and sand	Permeameter
4	Hardness of Rock and coal	Schmidt Hammer
5	Non-destructive test of rock, coal and composite material	Ultrasonic Pulse Velocity Tester
6	Protodyakonov Strength Index of rock and coal	Protodyakonov Index Tester
7	Point Load Strength of rock and coal	Point Load Tester
8	Rock fragmentation analysis	WipFrag Software
9	Blast vibration study	Micromate
10	Bench design	JK Bench
11	Haul Road Monitoring	Light Weight Deflectometer





# MINERAL ENGINEERING

The Department of Mineral Engineering was established in 2008 to cater the need of local Mineral Industry. The course is specifically designed to meet the requirements of the mineral industry particularly for quality control and processing of the minerals to bridge the gap between the progressively decreasing grades of mineral reserve and the increasingly stringent specifications for the user industry. The Department has well qualified faculty and staff dedicated to applied research and consultancy in the field of size reduction and classification of ore, physical separation techniques, solid liquid separation, agglomeration techniques etc.

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# MINERAL ENGINEERING

Sl. No.	Testing Facility	Available Equipment
1	Sampling of ore	Jones Riffle, Coning and Quartering Setup, Jaw Crusher
2	Particle size analysis	Sieve Shaker, Roll Crusher
3	HGI determination of coal	HGI Apparatus
4	Proximate analysis of coal, chemical analysis, LOI determination	Chemical Laboratory Setup, Muffle Furnace, Oven etc.
5	Test for Settling characteristics of particle, Filtration test	Filtration Equipment, Settling Test Setup
6	Sink-float analysis of coal	Sink-Float Setup
7	Beneficiation test of ore using Magnetic separation, Jigging, Tabling, Spirals, Electrostatic separation, Froth flotation	WHIMS, Davis Tube Separator, Mineral Jig, Wilfley Table, Mozely Mineral Separator, Spiral Concentrator, Electrostatic Separator, Flotation Cell, Hydrocyclone
8	Pelletization of iron ore fines	Disc Pelletizer, Ball Mill





# MECHANICAL ENGINEERING

The Department of Mechanical Engineering was established in 1997. The department has well qualified staff and faculty members and have modern and state of the art equipment to carry out industry required research and consultancy works

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# MECHANICAL ENGINEERING

Sl. No	Testing Facility	Available Equipment
1	Production of variety of gears as spur, helical etc with different specifications	CNC Lathe machine, CNC Milling machine, Radial drilling machine, universal indexing attachments etc
2	Production of different Jigs and Fixtures for special work holding, three dimensional models and components for biological & Mechanical demonstration etc,	3-D Printing machine
3	Fabrication Works by Welding	Gas and MIG Welding pro-
4	Testing and Characterization of Mechanical Properties of existing and New developed materials like commercially used steels, Al, Copper, Composites etc. (Tensile test, compression test, shear test,	BISS 100 KN static and Dynamic UTM, Micro hardness machine, Impact Testing Machine





# MECHANICAL ENGINEERING

Sl. No	Testing Facility	Available Equipment
5	Microstructure analysis of materials after developed from different manufacturing processes.	Jeiss Scanning Electron Microscope (SEM)
6	Roughness testing and Analysis	Diamond stylus probe Pyrometer
7	Thermal Characterization of materials like composite, steels ( Thermal conductivity testing)	Lee Thermal conductivity apparatus
8	Production of axi-symmetrical jobs, different threads, slots, and recess in any metallic components.	Engine lathe, slotting machine, milling machine and boring machine
9	Permeability number of Moulding sand	Permeability Test Rig





# CIVIL ENGINEERING

The Department of Civil Engineering was established in 2015 and is renowned for imparting state of the art undergraduate education and producing high quality technical manpower needed by industry, R&D organizations, and academic institutions. The various tests that can be conducted in the laboratories are as below.

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# CIVIL ENGINEERING



Sl. No	Testing Facility	Available Equipment
1	Tests for Cement like particle size distribution, Fineness, Consistency, Setting Time, Tensile Strength Soundness etc.	Sieve Shaker, Air Permeability Apparatus, Specific Gravity Apparatus, Vicat Apparatus, Tensile Test Apparatus, Le-Chatelier Apparatus
2	Tests of Concrete like Workability, Compressive Strength, Flexural Strength, Non-Destructive Test, Water Absorption, Porosity & Void Ratio of Concrete	Slum Cone Test Apparatus, Flow Table, Vee-Bee Test Apparatus, Computerized Compression Testing Machine 3000 kN and 1000 kN, Split Tensile Test Apparatus, Flexural Strength Test Apparatus, Ultra Sonic Pulse Velocity Tester
3	Tests for Index and Geotechnical Properties of Soil	Liquid Limit, Plastic Limit and Shrinkage Limit Apparatus, Sieve Shaker, Direct Shear Test Apparatus, Triaxial Test Apparatus, Consolidation Test Apparatus, CBR Test Apparatus, Proctor Compaction Test Apparatus
4	Field Survey for different works	Chain & Compass Survey Equipment, Theodolite, Auto Level, Dumpy Level, Total Station





# CIVIL ENGINEERING



Sl. No	Testing Facility	Available Equipment
5	Tests for soil, aggregate, bitumen and other construction material for highway construction	Crushing Value Test Apparatus, Aggregate Impact Tester, Los Angeles Abrasion Test Apparatus, Flash Point and Fire Point Test Apparatus, Penetration Test of Bitumen, Viscosity Test of Bitumen, Ring and Ball Apparatus Test for Bitumen, Ductility Test of Bitumen, Marshal Stability Test Apparatus
6	Study of geologic features, analyze soils and strata, assess seismic information, and or create three dimensional (3D) displays of geographic features	ARC-GIS Software



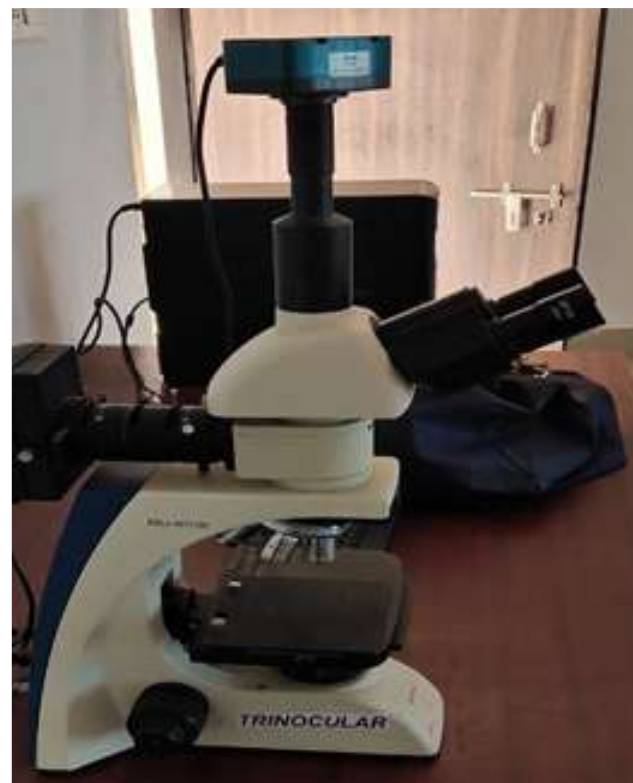


# METALLURGICAL AND MATERIALS ENGINEERING



The Department of Metallurgical and Materials Engineering was established in the year 2009. The department has developed state of the art laboratories with advanced material testing equipment. The department has well qualified staff and faculty members and being in the midst of the Mineral and Metallurgical Industries regularly takes of research and consulting works from the local industries.

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# METALLURGICAL AND MATERIALS ENGINEERING



Sl. No	Testing Facility	Available Equipment
1	Materials Characterization	Sample Preparation Apparatus, Scanning Electron Microscope, Image Analyzer
2	Materials testing	Universal Testing Machine, Micro Hardness Tester
3	Fabrication of low melting alloys	Muffle Furnace (1200 OC)





# REACH US...

Sl. No	Department	Head Of Department	Contact Details	Contact College
1	Mining Engineering	Prof. Soumya Ranjan Mallick	@ soumyamallick_fmn@gcekjr.ac.in ☎ +91-9437545820	📍 Jamunalia, Old Town, Keonjhar, 758002 (Odisha)  @ principal@gcekjr.ac.in
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Government College of Engineering, Keonjhar is a premiere educational institute in Northern Odisha near the foothills of Gandhamardhan. The establishment of this institution is itself a revolutionary accomplishment and is a constant source of inspiration since its inception.

It has proved to be an emerging arena of consistent development and hosted events like CPMAI, AME and Utkarsh Techno cultural fest in this year strengthening Industrial tie-ups and Social Service. The environment here favours progressive endeavours suitable for growth of students as intellectual individuals and of the Institution as a whole. The vicinity of our college campus is blessed with quite a few good places to visit and makes a calm and serene atmosphere. We humbly recall our infrastructure as one of the best among the Government Colleges of Odisha with modernised Hostel and College Blocks.



## GOVERNMENT COLLEGE OF ENGINEERING, KEONJHAR