About Kalyani Govt. Engineering College

1. The College

Kalyani Govt. Engineering College was set up by the Govt. of West Bengal to create quality technical manpower keeping in mind the ranid industrial development of the state. The college is funded by the Govt. of West Bengal both in the form of capital cost as well as recurring cost. The college is affiliated to Kalyani University and is managed by a Governing body chaired by the Minister-in-Charge, Dept. of Higher Education, Govt. of West Bengal. The first batch of students was admitted in August 1995. After successful completion of studies, students are awarded B. Tech degree in the respective discipline.

All the courses are approved by A.I.C.T.E.

2. Location

Kalyani is situated in the southern part of West Bengal in the district of Nadia. Located near the Kalyani University at a distance of 53 Km from Calcutta, the college can be conveniently accessed by rail or road. Trains from the Sealdah station connect Kalyani Ghoshpara which is the nearest railway station and is 2 Km away from the college. A number of buses ply from Esplanade / Babughat (Calcutta) to Kalyani. The students can be reached from Kalyani Ghoshpara by college vehicle or by cycle-rickshaw.

3. Existing Programs

The following programs are offered in the college:

i) B. Tech in Computer Science & Technology (60 intake)

ii) B. Tech in Electronics & Communication Engineering (60 intake)

iii) B. Tech in Mechanical Engineering (60 intake)

iv) B. Tech in Information Technology (40 intake)

4. Academic structure

The duration of the academic programs in Bachelor of Technology is 4 years. Each year is divided into two semesters. The first two semesters are common to all disciplines. Most of the departmental subjects are offered in the subsequent semesters. Students are to undergo training in industry during puja / summer vacation. The project work is offered in the 7th semester and spans over to the 8th semester.

5. Admission procedure

Only Indian citizens are eligible for admission. Application are entertained from candidates, both male and female, who have passed H. S. (10+2) examination with at least five subjects of which not more than two shall be vernacular subjects, in general or vocational stream of the Council of Higher Secondary Education, West Bengal, with English, Physics, Chemistry, Mathematics and vernacular of any other subjects (full marks not less than 100) or any equivalent examination of a recognized board or university. Each eligible candidate is required to appear in a written test conducted by the West Bengal Board of Examination for admission to Engineering, Medical and Technological Degree Colleges and only those qualifying in this Joint Entrance Examination and recommended by the Central Selection Committee can seek admission into the college. 22% of seats are reserved for Scheduled Caste and 6% of seats are reserved for the Scheduled Tribe candidates.

6. College Facilities

6.1 Library

The library consists of more than 8500 volumes and 25 periodicals, along with 22 technical magazines and newspapers. Apart from books, it contains project reports, conference proceedings, CR-ROMs and AV materials. The work on the computerization of the library and information services is going on and an electronic library is going to be established which will consist of CD-

ROMs, Floppies, Audio Visual materials etc.

6.2 Training and Placement Cell

The cell organizes industrial training for a period of 3 to 4 weeks at the end of 3rd year and normally during the vacations. Some of the organizations where the students go for training are GAIL, IOCL, HAL, NTPC, BARC, SAIL, Calcutta Telephones, Hindusthan Motors, Haldia Doc Complex, DSP, ASP, DVC, M. N. Dastur, Andrew Yule, CMERI, MECON, ESAB, Indian Airlines etc.

The cell is also guiding and helping the final year students in securing jobs commensurate with their knowledge and achievement by organizing campus interviews and exploring various other avenues for their placement.

6.3 Reprographic Section

The reprographic section is equipped with photocopier machine, cyclostyle machine, scanner, computer with printer etc.

6.4 Guest House

A guest house adjacent to the canteen with three furnished A C rooms plays host to the guests and dignitaries.

6.5 Internet

Internet connectivity using VSAT is established and is used by the entire community of the college. It is also planned to extend internet facility to the hostels in near future.

6.6 Others

All faculty members, officers and staff members can be accessed through telephone connections with the help of an EPABX system. A well organized canteen is operated within the campus. A general store meant for the students is also run within the academic block of the college. Memorial prizes are given to the students securing 1st rank in each discipline every year.

7. Residential Quarters

32 residential quarters have been built recently in four blocks in the first phase. More blocks will be constructed in subsequent phases.

8. Hostel Facilities

There are 3 boys' hostels in the college name Raja Rammohan Roy Hall, Vidyasagar Chhatrabas and Rishi Bankim Chandra Hall. A girls' hostel by the name Pritilata Chhatri Nibas with 100 seats recently became functional. Another boys' hostel is being constructed and shall be completed by the 2nd half of 2001.

9. Departmental Facilities

9.1 Chemistry

The department has a very good laboratory equipped with major equipment like conductivity meter, spectrometer etc. The department is also planning to create an instrumentation laboratory with equipment like spectrometer with recording facility, polarograph with recorder, IR-spectrometer, dipole moment measurement apparatus etc.

9.2 Computer Science and Technology

The department can rightfully boast of a state-of-the-art computing facility. The software laboratory is distributed in four rooms including one "server room". There are about 90 Pentiums (200 MHz) and 30 AT-486 machines, one laser printer, three desk-jet printers, and a number of dot-matrix printers in addition to the following :

- IBM AS-400 with a number of softwares and packages like DB2, JAVA etc.
- IBM RS-6000 (AIX) with a number of compilers and packages.
- Sun Ultra Sparc with Solaries 2.5.3, Java workshop and Oracle 7.3.
- P-II with SCO open system.

  All the machine connected through a LAN.

The department has all modern compilers and other softwares including Visual C++5.0, Visual BASIC V5.0, Powerbuider V6.0, Visual FOXPRO, Visual J++ etc. setting up a hardware-cum-peripheral laboratory. 20 new pentium III 667 MHz are being added with LAN & Internet facility. LAN is extended to all faculty departments, library and office.

Steps are being taken to strengthen the computing facility with Matlab software. Also efforts are being made to strengthen the peripheral device laboratory.

9.3 Electronics and Communication Engineering

The department has state-of-the-art communication, fiber-optic and microwave laboratories comprising the following major equipment:

- Two 3 GHz spectrum analyser.
- One 1040 MHz and two 550 MHz synthesized signal generators.
- Five 100 MHz and two 20 MHz digital storage oscilloscopes. Some of these are with FFT facility.
- Four 16 MHz arbitary function generators.
- One optical time domain reflectometer with optical unit and one optical loss test set with laser source.
- Five microwave training systems to measure dielectric constant and phase shift and to study (i) radiation pattern and gain of different types of antenna, (ii) couplers and circulators, (iii) microwave Gunn source and (iv) reflex Klystron.

More sophisticated equipment are being procured.

The other laboratories of the department are also well-equipped with the following major equipment.

- Thirtyfive 2-channel 25/30 MHz and five 2-channel 100 MHz oscilloscopes, thirty signal generators, fortyfive bread boards equipped with power supply and digital meters and fifty DMM to carry out experiment in analog and digital circuit and IC laboratories.
- A number of kits consisting of power supplies, digital meters and relevant devices / circuit to carry out experiments on solid state devices, analog and digital circuits and power electronics laboratories.
- Twenty five 8085 and twenty five 8086 based microprocessor kits with various accessories to carry out experiments in microprocessor and related laboratories.
- Seven pattern generators, six colour and three B/W TV picture tubes and fifteen TV kits for television laboratory.
- A number of ac bridges, transducers and associated setup for instrumentation and measurement laboratory.
- Feedback ACS 2956 communication system trainer kit.
- Transmission line and Antenna training system.
- Matlab.
- 14 Pentium machines for multipurpose use.

9.4 Mechanical Engineering

The Department of Mechanical Engineering has very good infrastructure and facilities with well equipped laboratories and workshops. Many laboratories and shops have latest, up-to-date equipment; however, few others are being augmented with more experimental set ups and machines. The laboratory and workshop profile of the Mechanical Engineering Department is detailed below.

Laboratory Set-up

Strength of Materials Lab – This laboratory has the following experimental set ups :

- Universal Testing Machine
- Rockwell Hardness Tester
- Brinell-cum-Vickers Hardness Tester
- Shore Hardness Tester
- Torsion Testing Machine
- Impact Testing Machine
- Fatigue Testing Machine
- Spring Testing Apparatus
- Cupping Testing Machine
- Extensometer

- Deflection of Beam Apparatus
- Strain Meter

Fluid Mechanics Lab – Following apparatus are there in Fluid Mechanics Laboratory, which has Hydraulics and Pneumatics divisions.

- Reynold's Apparatus
- Apparatus for Orifice Experiments
- Hot Wire Anemometer
- Pipe Friction Apparatus
- Venturimeter
- Pressure Measuring Bench and Devices
- Projection Manometer
- Three Dimensional Traverse Mechanism
- Stoke's Law Apparatus
- Metacentric Height Apparatus
- Bernoulli's Apparatus
- Pitot Static Tube
- Low Speed Wind Tunnel
- Flow Visualisation Wind Tunnel

Fluid Machinery Lab – This laboratory has been started with the test rig given below :

- Variable Speed Centrifugal Pump and Weir Test Rig

Thermodynamics Lab – Following equipment are housed in the thermodynamics laboratory :

- Bomb Calorimeter
- Orsat Gas Analyzer
- Wet and Dry Bulb Thermometer
- Zero Setting Planimeter
- Two Stage Air Compressor Test Rig
- Disassembled Parts of a Petrol Engine
- Models of 2-Stroke and 4-Stroke Petrol Engine
- Models of 2-Stroke and 4-Stroke Diesel Engine
- Model of Babcock and Wilcox Boiler
- Model of Cochran Boiler

Heat Transfer Lab – Wide ranges of apparatus are available in this laboratory, which are:

- Emissivity Measurement Apparatus
- Set up for Heat transfer in Natural Convection
- Equipment for Heat Transfer from Pin Fin
- Parallel Flow or Counter Flow Heat Exchanger
- Stephan-Boltzman Apparatus
- Thermal Conductivity of Insulating Powder Apparatus
- Thermal Conductivity of Metal Bar Testing Set Up
- Thermal Conductivity Apparatus on Two Slab Guarded Hot Plate
- Fluke-45 Digital Multimeter
- Aneroid and Fortin's Barometer
- Digital Anemometer
- Digital Differential Temperature Indicator

IC Engine Lab – A number of test rigs are present in this laboratory for experimentation.

- Computer-Based Petrol Engine Test Rig
- Multi-Cylinder Four Stroke Petrol Engine Test Rig
- Single Cylinder Two Stroke Petrol Engine Test Rig
- Single Cylinder Four Stroke Diesel Engine Test Rig

Refrigeration and Air Conditioning Lab – Basic set ups required for this laboratory are available, which are :

- Refrigeration Tutor
- Mechanical Heat Pump
- Air Conditioning tutor

Design and Computational Lab – Recently, the department has established the Design and Computational Laboratory with the following facilities. More softwares and personal computers would be included in this lab shortly.

- Pentium I, Pentium II and Pentium III personal computers
- Plotter- Ao Size
- Dot Matrix, Deskjet and Laser Printers
- ANSYS-5.6 (FEM Analysis) Software
- AutoCAD Software – Release 14.0

- Webtricity Software
- MS Office 2000
- Turbo C, FORTRAN-77 and Other Compilers

Manufacturing Technology Lab – Following machines and equipment are available in this laboratory.

- Computer Numerical Control (CNC) Lathe with Motorola Control Unit
- Electric Discharge Machine
- Tool and Cutter Grinder
- Precision Centre Lathe
- Strain Gauge Type Grinding Dynamometer

Metrology Lab – This well equipped laboratory includes the following major equipment :

- Surface Roughness Tester
- Tool Makers Microscope
- Sine Bar and Slip Gauge Set
- Three Wire Micrometer Set
- Gear Tooth Vernier Caliper
- Digimatic Height Gauge, Depth Gauge and Micrometer
- Digimatic Dial Indicator
- Wide Ranges of Micrometers, Calipers and gauges

Metallography Lab – This laboratory provides the sample preparation facility for metallographic observation using the equipments listed below :

- Metallurgical Microscope
- Disc Grinder/Polisher
- Belt Grinder/Polisher
- Hot Mounting Press
- Electrolytic Polishing and Etching Machine
- Abrasive Cutting-off Machine
- Ultrasonic Cleaner
- Dye Penetration Test Kit
- Ultrasonic Flaw Detector

Mechanical Workshop

Machine Shop – Machine shop has the major equipments like

- Engine Lathe
- Shaping Machine
- Universal Milling Machine
- Radial Drilling Machine
- Pillar Drill
- Surface Grinding Machine
- Slotting Machine
- Pedestal Grinder
- Power Sawing Machine

Welding Shop – This shop includes

- Flux Shielded Metal Arc Welding Machine
- Metal Inert Gas (MIG) Welding Machine
- Gas Welding Equipment
- Resistance Spot Welding Machine
- Brazing Equipment
- Oxy-acetylene Flame Cutting Accessory

Carpentry Shop – Following equipment are available in the Carpentry shop where pattern shops are also conducted :

- Wood Turning Lathe
- Vertical Band Saw Machine
- Circular Sawing Machine
- Thickness Planer/ Jointer
- Surface Planing Machine
- Chain and Chisel Mortiser
- Different Types of Hand Tools

Fitting Shop – This shop includes all sorts of major hand tools required along with the following machines :

- Bench Drilling Machine
- Bench Grinder
- Other Accessories Required

Sheet Metal Shop – This shop is well developed with the required hand tools and the major machines listed below :

- Fly/Ball Press

- Bending Rolls
- Sheet Bending Machine
- Guillotine Shearing Machine
- Lever Type Hand Shearing Machine

Forging Shop – Following are the equipment under this shop.

- Forging Hearths
- Electric Motor Driven Blower

Foundry Shop – Recently this shop has been started with the following facilities :

- Sand Moulding facility
- A Muller for sand preparation is in the process of procurement

9.5 Information Technology

This department has just started operating from the academic year 2000 - 2001. The department will be developed in a new building with modern computers, multimedia and advanced information processing laboratories with distributed computing facility, advanced AI and image processing/analysis facility etc.

9.6 Physics

The department has very good laboratory which encompasses the experiments from General Physics to Laser Physics. There are two other wings: i)Basic Electronics, ii) Basic Electrical. The latter two also are well equipped.

There was a young lady named Bright
Whose speed was far faster than light
She set out one day
in a relative way,
And returned home the previous night

— Arthur Henry Buller