



Dr.Nagesh .R.Iyer,Director, Structural Engineering Research Centre
with Chancellor,Vice Chancellor, Director & delegates

CIVIL ENGINEERING

OBJECTIVES, OUTCOMES AND PROSPECTS

OBJECTIVES

- Will prepare graduates with the technical and managerial skills necessary to enter careers in the planning, design, construction, operation or maintenance of the built environment and global infrastructure.
- Typically have strengths in their knowledge of the building, testing, operation and maintenance of infrastructure with the ability to produce and utilize basic construction documents and perform basic analysis and design of system components whereas baccalaureate degree graduates are prepared to analyze and design systems, specify project methods and materials, perform cost estimates and analyses, and manage technical activities in support of civil projects.

OUTCOMES

Capable of

- Utilizing graphic techniques to produce engineering documents.
- Conducting standardized field and laboratory testing on civil engineering materials.
- Utilizing modern surveying methods for land measurement and/or construction layout.
- Determining forces and stresses in elementary structural systems.

- Estimating material quantities for technical projects and
- Employing productivity software to solve technical problems.


Capable of

- Planning and preparing design and construction documents such as specifications, contracts, change orders, engineering drawings and construction schedules.
- Performing economic analyses and cost estimates related to design, construction, operations and maintenance of systems in the civil technical specialties.
- Selecting appropriate engineering materials and practices.
- Applying basic technical concepts to the solution of civil problems involving hydraulics, hydrology, geodetics, structures, material behaviour, transportation systems, and water and wastewater systems.
- Performing standard analysis and design in at least three of the recognized technical specialties within civil engineering technology that are appropriate to the goals of the programme.

PROSPECTS

The demand for qualified civil engineers is so great with explosion in investment in infrastructure building all over the world that the present supply of manpower will continue to be short.



	<p>Manisha Kumari(VT 5298)</p>	<p>Presented Non Linear Neuro fuzzy Control for Improving performance of PID based Micro Turbine System</p>	<p>In INSAC2009</p>
---	--------------------------------	---	---------------------



S P Patnaik, MTI-SAIL(ED,HRD) with Chancellor

Knowledge Buffet

Applied Geology
 Engineering Mechanics
 Construction Engineering
 Geodesy
 Civil Engineering Drawing
 Water and Waste Water Engineering
 Structural Mechanics
 Hydraulic Engineering
 Fluid Mechanics III
 Soil Mechanics
 Design of Structures
 Design in Open Channel Flow
 Engineering Law
 Transportation Engineering
 Physical Modelling in Geotechnics
 Hydraulic Structures
 Machine Foundations
 Prestressed Concrete Design
 Elements of Structural Dynamics
 Probabilistic and Statistical Methods in Civil Engineering
 Advanced Solid Mechanics
 Transportation Planning
 Plastic Analysis & Design
 Computer Aided Design of Civil Engineering System
 Construction Management
 Concrete Technology
 Rock Mechanics & Tunnelling Technology
 Environmental Geotechnics
 Elements of Remote Sensing
 Design of Offshore Structure
 Applied Statistics
 Numerical Techniques in Hydraulic Engg
 Transportation Infrastructure Systems
 Introduction to Earthquake Engineering
 Advanced Structural Mechanics
 Plates and Shells
 Structural Stability
 Reliability Based Civil Engineering Design
 Nonlinear Analysis
 Analysis of Offshore Structures
 Structural Design
 Soil Structure Interaction
 Environmental Geomechanics
 Earthdam Engineering
 Experimental Geotechnics
 Geotechnical Centrifuge Modelling
 Tunnel Engineering

Soil Dynamics and Machine Foundations
 Finite Element Methods in Geotechnical Engineering
 Foundations of Offshore Structures
 Physical and Stochastic Hydrology
 Fluid Loading on Offshore Structures
 River Mechanics & Control Structures
 Advanced Experimental Fluid Mechanics
 Mechanics of Water Waves
 Finite Element Applications to Flow Problems
 Marine Geotechnical Engg
 Advanced Geotechnical Earthquake Engineering
 Advanced Stochastic Hydrology
 Offshore Construction
 Risk Assessment & Management in Geotechnical Engineering
 Floating Structures and Submarine Pipelines
 Photogrammetric Engineering
 Remote Sensing in Water Resources Management
 Remote Sensing in Geotechnical Engineering
 Data Processing in Remote Sensing
 Non-Destructive Testing of Materials
 Mechanics of Fluid Flow
 Environment Impact Analysis of Water Resources Systems
 Irrigation and Conveyance Network
 Analysis of Transportation System
 Reinforced Earth and Geotextiles
 Urban Transportation Systems Planning
 Regional & Rural Transportation Systems Planning
 Traffic Design and Studio
 Economic Evaluation and Analysis of Transportation Project
 Digital Methods in Terrain Data Analysis
 Hydroinformatics
 Environmental Fluid Mechanics
 Watershed Management
 Hydrological Hazard Mitigation and Management
 Urban Water and Environmental Management
 Coastal and Ocean Environment
 Behavioural Travel Modelling
 Hydrology
 Cartography
 Electronic Surveying
 Remote Sensing Techniques and Applications
 Geographical Information System
 Traffic Engineering Management
 Housing Planning & Management
 Habitat Systems and Design
 Ground Water Engineering
 Management of Irrigation Systems
 Coastal Zone Management

Department of Civil Engineering

Water Resources Engineering
 Pavement Engineering
 Ground Improvement Techniques
 Introduction to Soil Dynamics and Machine Foundations
 Rock Engineering
 Environmental Impact Assessment of Civil Engineering Projects
 Industrial Waste Management
 Air Pollution Management
 Municipal Solid Waste and Management
 Ecological Engineering
 Bridge Structures
 Storage Structures
 Design of Plate and Shell Structures
 Tall Buildings
 Structural Dynamics
 Prefabricated structures
 Wind Engineering
 Computer Aided Design of Structure
 Industrial Structures
 Smart Structures and Smart Materials
 Finite Element Technique
 Repair and Rehabilitation of Structures
 Architecture
 Mechanics of Fluids
 Construction Techniques, Equipment and Practice
 Surveying
 Computer Aided Building Drawing
 Strength of Materials
 Applied Hydraulic Engineering
 Highway Engineering
 Irrigation Engineering
 Structural Analysis – Classical Method
 Railways, Docks & Harbours and Airports
 Foundation Engineering
 Structural Analysis – Modern methods
 Design of Steel Structures
 Construction Planning & Scheduling
 Design of RC Elements
 Irrigation Engineering Drawing
 Design of RC and Reinforced Brick Masonry Structures
 Estimation and Quantity Surveying
 Basics of Dynamics and Aseismic Design
 Building Services
 Engineering Economics and Cost Analysis
 Environmental Science and Engineering
 Object Oriented Programming
 Intellectual Property Rights (IPR)
 Indian Constitution and Society
 Contract Laws and Regulations
 Professional Ethics and Human Values
 Mathematics – III
 Numerical Methods
 Probability and Statistics
 Principles of Management
 Total Quality Management

LABORATORIES

Survey Practical I -Computer Aided Building Drawing -
 Strength of Materials Lab - Hydraulic Engineering Lab -
 Survey Practical - Environmental Engineering Lab -
 Soil Engineering Lab - Irrigation Engineering Drawing -
 Environmental Engineering Drawing - Survey Camp -
 Computer Aided Design and Drafting Lab -
 Design Project



Delegates from CDAC-Pune
with Chancellor, Vice Chancellor, Pro Chancellor & Director
after signing collaborative arrangement for special programmes

COMPUTER SCIENCE & ENGINEERING

OBJECTIVES, OUTCOMES AND PROSPECTS

OBJECTIVES

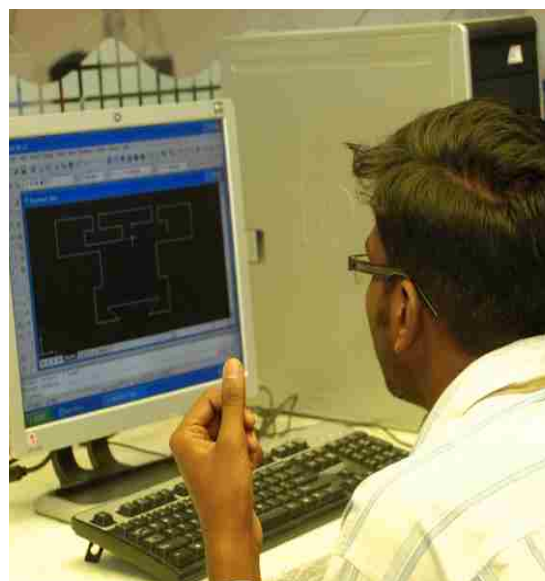
- Will prepare graduates with the technical and managerial skills necessary to enter careers in the design, application, installation, operation and/or maintenance of computer systems.
- Typically have strengths in the building, testing, operation and maintenance of existing computer systems and their associated software systems whereas baccalaureate degree graduates are well prepared for development and implementation of computer systems.
- Knowledge and hands-on competence appropriate to the goals of the programme in:
- The application of electric circuits, computer programming, associated software applications, analog and digital electronics, microcomputers, operating systems, and local area networks to the building, testing, operation, and maintenance of computer systems and associated software systems.
- The applications of physics or chemistry to computer systems in a rigorous mathematical environment at or above the level of algebra and trigonometry.
- The ability to analyze, designs, and implement hardware and software computer systems.


OUTCOMES

- The ability to apply project management techniques to computer systems.
- The ability to utilize statistics/probability, transforms methods, discrete mathematics or applied differential equations in support of computer systems and networks.

PROSPECTS

In spite of the present economic trends, in the information age the demand for Computer engineers for product development and innovative systems in hardware and software across all industries and services will continue to be high.



	<p>Sundar. N(VT 5251)</p>	<p>Presented Non Linear Neuro fuzzy Control for Improving performance of PID based Micro Turbine System</p>	<p>In INSAC2009</p>
---	---------------------------	---	---------------------



Prof. Dr. Rajkumar Buyya, University of Melbourne, Director, Manjrasoft Pty Ltd., Melbourne, Australia with Chancellor after exchanging MoU in Manjrasoftware

Knowledge Buffet

Abstractions and Paradigms for Programming
 Adhoc Networks
 Advanced Algorithms
 Advanced Computer Architecture
 Advanced Computer Graphics
 Advanced Data Networks
 Advanced Database Management Systems
 Advanced Digital Signal Processing
 Advanced JAVA Programming
 Advanced Microprocessors and Microcontrollers
 Advanced Operating Systems
 Advanced Wireless Networks
 Agent Based Intelligent Systems
 Algorithms and Complexity
 Analog and Digital Communication
 Analytical Models of Computing Systems
 Applied Probability and Operations Research
 Artificial Intelligence
 ASIC Design
 Automata Theory and Logic
 Bio informatics
 C# and .NET Framework
 Cellular Mobile Communications
 Communication Network Security
 Communication Networking
 Communication Systems
 Compiler Design
 Component Based Technology
 Computational Learning Theory
 Computer Aided Geometric Design
 Computer Architecture
 Computer Architecture and Parallel Processing
 Computer Graphics
 Computer Networks
 Computer Networks Engineering and Management
 Computer Organisation and Design
 Computer Programming and Utilization
 Cryptography and Network Security

Data Base Technology
 Data Mining
 Data Structures and Algorithms
 Data Warehousing and Data Mining
 Database and Information Systems
 Database Management Systems
 Database Modelling and Design
 Design & Implementation of Functional Programming Languages
 Design and Analysis of Algorithms
 Design and Analysis of Computer Networks
 Design and Implementation of GUI Design Patterns
 Digital Image Processing
 Digital Principles and Systems Design
 Digital Signal Processing
 Discrete Mathematics
 Discrete Structures
 Distributed Algorithms
 Distributed Computing
 Distributed Operating Systems
 E-Commerce Technology
 Electronic Design
 Embedded Systems
 Enterprise Networks
 Environmental Science and Engineering
 Formal Language and Models for Natural Computing
 Formal Methods and Requirements Engineering
 Formal Methods in Computer Science
 Formal Specification and Verification of Programs
 Functional and Logic Programming
 Genetic Algorithms and Applications
 Geometric Algorithms
 Graph Theory
 Graphical Models and Structured Learning
 Grid Computing
 High Performance Communication Networks
 High Performance Microprocessors
 High Speed Networks

High Speed Switching Architecture
 ICT for Socio-economic Development
 Implementation Techniques for Relational Database Systems
 Information Retrieval & Mining for Hypertext & the Web
 Information Security
 Information Systems
 Internet Concepts and Programming
 Internet Programming
 Introduction to Computer Systems
 Introduction to Asynchronous Systems
 Introduction to VLSI Design
 Automation
 IT Project Management
 Knowledge Based Decision Support Systems
 Language Technologies on the Web
 Linear Optimization
 Machine Learning :Theory and Methods
 Mathematical Foundations of Computer Science
 Mathematics III
 Transforms and partial differential equation
 Microprocessors & Microcontrollers
 Microwave Circuits
 Mobile Computing
 Modelling and Simulation
 Modern Digital Communication Techniques
 Multimedia Compression Technologies
 Multimedia Systems
 Network Engineering and Management
 Network Security
 Neural Networks, Architecture and Applications
 New Trends in Information Technology
 Non linear Fiber Optics
 Numerical Computation
 Numerical Methods
 Object Oriented Analysis and Design

Object Oriented Programming
 Operating Systems
 Optical and Access Network
 Optical Fiber Communication
 Optical Networks
 Parallel Computing
 Parallelizing Compilers
 Pattern Recognition
 Performance Analysis of Computer Systems and Network
 Performance Evaluation of Computer Systems and Networks
 Personal Software Process and Team Software Process
 Principles of Management
 Principles of Programming Languages
 Probability and Queueing Theory
 Probability and Statistics for Computer Science
 Professional Ethics and Human Values
 Program Analysis
 Quantum Computing
 Real Time Systems
 Real-Time and Embedded Systems
 Reliability Engineering
 Reliable Computing Basic Concepts
 Resource Management Techniques

LABORATORIES

Data Structures Lab-
 Object Oriented Programming Lab-
 Digital Lab-System Software Lab-
 Operating Systems Lab-
 Visual Programming Lab-
 Network Lab-
 Microprocessors and
 Microcontrollers lab-
 Database Management Systems lab-
 Graphics and Multimedia Lab-
 Compiler Design Lab-
 Case Tools Lab-
 Internet Programming Lab



Mr.D.Jai Ramesh, Chairman, Vijay Electricals
with Chancellor and Pro Chancellor

ELECTRICAL AND ELECTRONICS ENGINEERING

OBJECTIVES, OUTCOMES AND PROSPECTS

OBJECTIVES

- Will prepare graduates with the technical and managerial skills necessary to enter careers in the design, application, installation, manufacturing, operation and/or maintenance of electrical/electronic(s) systems.
- Typically have strengths in the building, testing, operation and maintenance of existing electrical systems whereas baccalaureate degree graduates are well prepared for development and implementation of electrical/electronic(s) systems.
- Knowledge and hands-on competence appropriate to the goals of the programme in:
- The application of circuit analysis and design, computer programming, associated software, analog and digital electronics, and microcomputers to the building, testing, operation, and maintenance of electrical/electronic(s) systems.
- The applications of physics or chemistry to

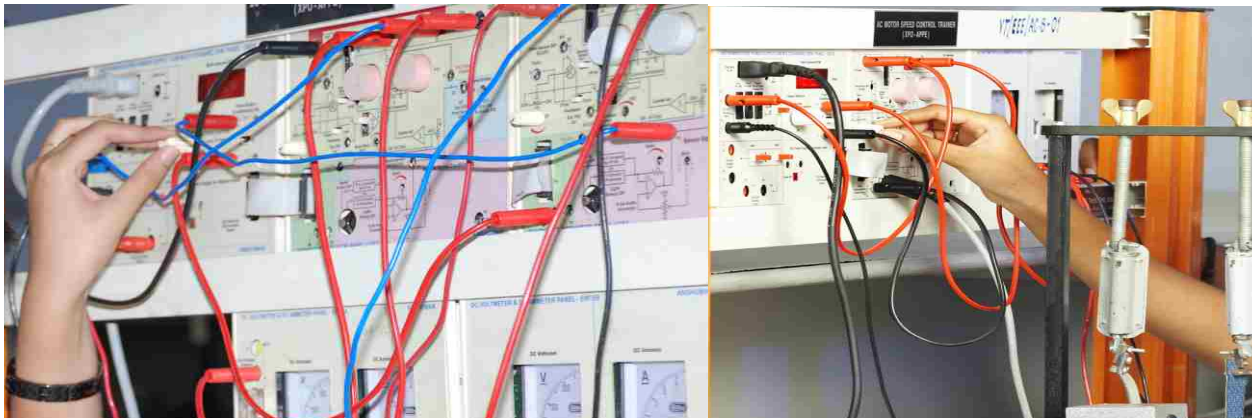
electrical/electronic(s) circuits in a rigorous mathematical environment at or above the level of algebra and trigonometry.

OUTCOMES

- The ability to analyze, designs, and implement control systems, instrumentation systems, communications systems, computer systems or power systems.
- The ability to apply project management techniques to electrical/electronic(s) systems.
- The ability to utilize statistics/probability, transforms methods, discrete mathematics or applied differential equations in support of electrical/electronic(s) systems.

PROSPECTS

This evergreen branch of engineering is all pervasive. Provides ample scope to move around different areas. Provides satisfaction to the hard core who would like to remain in basic engineering domain.



	<p>K.H. Santhosh(VT 5097)</p>	<p>Participated in International Aerial Robotics Competition IARC- USA</p>
---	-------------------------------	--



**Dr.J.Sundararajan, Joint Director,CPRI, Bangalore
with Director**

Knowledge Buffet

- | | | | |
|--|--|---|--|
| Adaptive Control Systems | Cryptography and Network Security | IC Design & Technology | Power System Analysis |
| Adaptive Signal Processing | Data Communication & Networks | Industrial Instrumentation | Power System Control |
| Advanced Control System | Data Structures and Algorithms | Information Theory & Coding | Power System Dynamics |
| Advanced Digital System Design | Design of Electrical Apparatus | Intelligent Control | Power System Protection |
| Advanced Embedded Systems | Design of Embedded Systems | Internetworking Technology | Power System Transients |
| Advanced Microprocessors & Micro controllers Design | Signal Image Processing | Introduction to Electrical and Electronics Circuits | Principles of Electrical Engineering |
| Advanced Network Analysis | Digital Logic Circuits | Introduction to Electrical Systems | Principles of Management |
| Advanced Power Semiconductor Devices | Digital Measurement Techniques | Introduction to Fibre Optic Communications | Professional Ethics & Human Values |
| Advanced Power System Dynamics | Digital Message Transmission | Introduction to MEMS | Protection & Switchgear |
| Advanced Solid State Physics | Digital Protection of Power Systems | Large Sparse Matrix Computations | Radar Systems |
| Advances in Communications Systems | Digital Signal Processing and its Applications | Linear and Non-linear Systems Theory | Radiating Systems |
| Aids for the Motor and Sensory Disabled | Digital Signal Processors | Linear Integrated Circuits | Radio Frequency Microelectronics Chip Design |
| An Introduction to Number Theory and Cryptography | Discrete Data and Digital Control | Markov Chains and Queuing Systems | Real Time Operating Systems |
| Analog Circuits | DSP Integrated Circuits | Mathematics – III | Real Time Systems |
| Analog Filters | EHV Power Transmission | Matrix Computations | Restructured Power Systems |
| Analysis of Inverters | Electric Drives | Measurements & Instrumentation | Sensors in Instrumentation |
| Analysis of Power Converters | Electric Energy Generation, Utilization and Conservation | Micro Controller System Design and Applications | Signals & System |
| Application of Power Electronics to Power Systems | Electrical Energy Systems | Microprocessor & Microcontroller | Simulation of Devices and Circuits |
| Applied Linear Algebra | Electrical Machine Analysis and Control | Microprocessor Applications in Power Electronics | Soft Computing |
| Applied Mathematics for Electrical Engineers | Electrical Machines | Microwave & Satellite Communication | Software Engineering and Architecture |
| Applied Mathematics for Embedded System | Electrical Machines and Power Electronics | Microwave Integrated Circuits | Software Technology for Embedded |
| Applied Thermodynamics | Electromagnetic Theory | Mobile Communication | Solid State AC Drives |
| Artificial Intelligence and Expert Systems | Electromagnetic Waves | Modelling and Analysis of Electrical Machines | Solid State DC Drives |
| Artificial Intelligence Application to Power Systems | Electronic Circuits | Modern Electronic Design Techniques | Solid State Microwave Devices and their Applications |
| ASIC Design | Electronic Devices | Modern Filter Design | Special Electrical Machines |
| Behavioral Theory of Systems | Electronic Instrumentation | Multimedia Systems | Special Semiconductor Devices |
| Bio Sensors & BioMEMS | Electronic Systems Design | Nanoelectronics | Speech Processing |
| Biomedical Instrumentation | Embedded Communication Software Design | Network Theory | Statistical Signal Analysis |
| Circuit Simulation in Power Electronics | Embedded Control of Electrical Drives | Neural Network and Fuzzy Logic Control | Switchgear Principles |
| CMOS Analog VLSI Design | Embedded Control Systems | Nonlinear Control Systems | System Design |
| Communication Systems | Embedded Networking | Nonlinear Dynamical Systems | Tele Communication Switching and Networks |
| Computational Electromagnetics | Embedded Systems Design | Numerical Methods | Telematics |
| Computer Aided Design of Electrical Apparatus | Environmental Science and Engineering | Object Oriented Programming | Testing and Verification of VLSI Circuits |
| Computer Aided Power System Analysis | Error Correcting Codes | Operating Systems | Total Quality Management |
| Computer Architecture | Estimation and Identification | Operations Research | Transducers in Instrumentation |
| Computer Communication and Networks | Fibre Optics and Laser Instruments | Optimal Control Systems | Transients in Power Systems |
| Computer Control and Automation of Power Systems | Finite Fields and their Applications | Physical Electronics | Transmission & Distribution |
| Control Systems | Flexible AC Transmission Systems | Physics of Transistors | VHDL |
| Control Systems Design | Foundation of VLSI CAD | Power Electronics | Visual Languages and Applications |
| | HV D C Transmission | Power Quality | VLSI Architecture and Design |
| | High Power Semiconductor Devices | Power Semiconductor Controlled Drives | Methodologies |
| | High Voltage Direct Current Transmission | | VLSI Design |
| | High Voltage Switchgear | | VLSI Technology |

Laboratories

Circuit Analysis Lab - Data Structures and Algorithms Lab - Electric Circuits Lab - Electrical Machines Lab I - Electronic Devices and Circuits Lab - Control Systems Lab - Object Oriented Programming Lab - Integrated Circuits Lab - Power Electronics Lab - Microprocessor and Micro Controller Lab - Measurements and Instrumentation Lab - Communication Skills and Seminar - Power System Simulation Lab