



# CITY ENGINEERING COLLEGE

Approved by AICTE New Delhi & Affiliated by VTU, Belagavi  
Doddakallasandra, Off Kanakapura Main Road,  
Next to Gokulam Apartment, Bangalore - 560 062.



## CRITERION 1 – CURRICULAR ASPECTS

**KEY INDICATOR:** 1.2 Academic Flexibility.

**Metric Number:** 1.2.1 Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc. Where the students of the institution have enrolled and successfully completed during the year 2021-22

**Institutional programme brochure/notice for Certificate/Value added programs with course modules and outcomes**

Sl. No.	Name of VAC/Certificate Course, MOOCs, SWAYAM, NPTEL
1	Electric Vehicle Technology
2	Public Speaking and Presentation Skills
3	Block chain Basics
4	Entrepreneurship and innovation
5	Advanced Survey Instruments
6	CRDI- Art of Combustion in CI Engines
7	Python using Arduino 3.0



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Next to Gokulam Apartment, Bengaluru - 560062

Five-day Value-Added course on  
“ELECTRIC VEHICLE TECHNOLOGY”

(04/04/2022 - 08/04/2022)

Organized by

Department of Electronics & Communication  
Engineering  
City Engineering College  
Bengaluru - 560062

Shylaja K  
Assistant Professor  
Dept. of Electronics & communication  
Engineering  
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## Chief Patron

**Dr. K.R. Paramahamsa**  
Chairman,  
MBA, Ph.D. (USA). D. Lit  
AMC – City group of Institutions,  
Bengaluru.

## Patrons

**Dr. H N Thippeswamy**  
Principal, CEC, Bengaluru

**Dr. Jyothi P**  
Vice- Principal, CEC, Bengaluru

**Dr. Sowmya Naik P.T.**  
Executive Officer, CEC, Bengaluru

**Convener**  
**G.S Mallikarjuna**  
HOD, ECE, CEC, Bengaluru

**Venue: VLSI Lab**

## About the College

City Engineering College, Bangalore affiliated to Visvesvaraya Technological University (VTU) is centrally located in Bangalore. The College has expanded over the last 19 years with sophisticated infrastructure as a part of the Institution's commitment to provide higher quality education in the area of Engineering. The highly facilitated landmark building – provides a perfect ambience for creativity and learning. City Engineering College is known for its academic excellence, friendly welcoming atmosphere and community spirit. Over large number of full-time students study here in a wide range of programs. It is a center of talented, experienced teachers who inspire and energize the students to achieve the best.





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Department of Electronics and Communication Engineering  
Value- Added Course on  
“ELECTRIC VEHICLE TECHNOLOGY”

Objectives:

1. Understand EV Fundamentals: Comprehend the basic principles of electric vehicle operation, including differences from conventional vehicles.
2. Analyze EV Powertrains: Evaluate various types of electric powertrains and their applications in different vehicle classes.
3. Examine Battery Technologies: Explore different battery chemistries, their characteristics, charging methods, and safety considerations.
4. Discuss Sustainability Aspects: Assess the environmental impact of EVs compared to conventional vehicles, including life cycle analysis and emissions reduction potential.

SYLLABUS

Module 1: Introduction to Electric Vehicles

- Definition and types of electric vehicles
- History and evolution of electric vehicles
- Importance of electric vehicles in modern transportation

Module 2: Traction Motors

- Traction motor fundamentals:
  - Principles of operation
  - Comparison of motor types (DC, AC induction, PMSM)
- Motor controllers:
  - Role and function
  - Power electronics for motor control

Module 3: Battery Management Systems (BMS)

- Functionality and importance of BMS in EVs
- Components of BMS: sensors, controllers, software
- Role of BMS in monitoring battery health, safety, and performance

Module 4: Traction Batteries

- Importance of traction batteries in EVs
- Comparison between traction batteries and conventional automotive batteries
- Battery pack assembly and management systems
- Thermal management and cooling strategies



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## Module 5: Electric Vehicle Grid Integration

- Vehicle-to-grid (V2G) concepts:
  - V2G technologies and benefits
  - Grid stability and smart grid interactions
- Vehicle dynamics and motor integration:
  - Placement and mounting considerations
  - Mechanical and electrical interfacing with other vehicle systems

### Course Outcomes

At the end of the course, students were able to:

- Describe the fundamental principles and components of electric vehicles.
- Compare and contrast different types of EV powertrains and their applications.
- Evaluate various battery technologies used in electric vehicles.
- Discuss the environmental and sustainability aspects of electric vehicles.

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Coordinator

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[G.S. Mallikarjuna]

HOD, ECE

Handwritten signature of the Principal.

PRINCIPAL  
CITY ENGINEERING COLLEGE

Kanakapura Main Road, BANGALORE - 560 091



## ABOUT COLLEGE

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## CHIEF PATRON

**Dr. K R Paramahamsa,**  
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AMC-City - Brooklyn Group of institution



## PATRONS

**Dr. H N Thippeswamy,**  
Principal, CEC

**Dr. Jyothi P,**  
Vice Principal, CEC

## CONVENER

**Mr. Vivekavardhana Reddy,**  
HOD CSE

## COORDINATORS

**MR. GIRISHA G A,**  
ASSISTANT PROFESSOR,  
DEPARTMENT OF CSE

**MRS. LAXMI M C,**  
ASSISTANT PROFESSOR,  
DEPARTMENT OF CSE



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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Add On Course  
On

## PUBLIC SPEAKING SKILLS AND PRESENTATION

28th March to 1st April 2022

## RESOURCE PERSON

**Ms Anagha S**  
Assistant Professor  
Department of PG Studies &  
research in Psychology, Kateel  
Ashok Pai Memorial College.  
Clinical Psychologist, Manasa  
Nursing Home, Shimogga.

## ABOUT THE DEPARTMENT

The Department of Computer Science & Engineering was started in the year 2001 is known for imparting Quality education and carrying out cutting edge research. In addition to the UG program, PG CSE program and Research facilities for Ph.D. The department offers undergraduate program and has a comprehensive curriculum on topics related to software and hardware with an emphasis on theoretical and practical learning. It has well equipped, state of the art laboratories supported by highspeed Internet and wireless networks.

## ABOUT THE COURSE

The "Value Added Course on Public Speaking and Presentation Skills" is designed to enhance participants' abilities in delivering impactful speeches and presentations. It offers a comprehensive approach to mastering both fundamental and advanced aspects of public speaking. The course covers essential topics such as overcoming public speaking fears, effective communication techniques, speech structuring, and engaging presentation methods. Participants learn to utilize visual aids, storytelling, and interactive elements to captivate their audience. The course emphasizes hands-on practice, providing opportunities for delivering speeches and receiving constructive feedback. Additionally, it addresses confidence-building strategies and managing presentation challenges. Overall, the course aims to equip learners with practical skills and confidence to excel in various public speaking contexts.



## COURSE OUTCOMES

- ◆ Participants will master advanced communication techniques, including persuasion, influencing skills, and humor.
- ◆ Participants will gain confidence in public speaking and adapt to unexpected challenges with resilience.
- ◆ Participants will apply theoretical knowledge effectively in diverse practical scenarios.
- ◆ Participants will use personalized feedback for continuous improvement in their communication skills.

## ABOUT RESOURCE PERSON

Mrs. Neha Signal is having 14 years of teaching experience, presently working as a Professor in the Dept. of Computer Science, CHRIST (Deemed to be university). She obtained her PhD Degree from VTU in 2021 and M. Tech (Regular) from banasthali university, Rajasthan. Her teaching and research interests are in the field of web services. She is a professional member of ISTE and IEEE society. Neha Singhal published various scoups indexed and ESCI indexed papers in various journals. She delivered various technical talks and invited as a resource person to the several Bangalore colleges. She authored a text book on Industry 4.0 index in Scopus. She received the funding for more than 5 projects from various funding agencies during 2018 to now. She is awarded for the exemplary services at RRCE. She is nominated as a research pannel member by christ university.





## Department of Computer Science and Engineering

### Value Added Course on Public Speaking and Presentation Skills

#### Course Content

Module	Topic	Content
1	Introduction to Public Speaking	Understand the importance of public speaking. Identify common fears and anxieties related to public speaking. Learn strategies to overcome fears and build confidence.
	Elements of Effective Communication	Explore verbal and non-verbal communication skills. Understand the impact of body language and voice modulation. Practice effective communication techniques.
2	Structuring Your Speech	Learn the components of a well-structured speech. Develop techniques for organizing content. Create memorable openings and closings.
	Message Clarity and Conciseness	Choose impactful words for clear communication. Eliminate jargon and unnecessary details. Practice delivering concise messages.
3	Captivating Presentation Techniques	Explore effective use of visual aids and storytelling. Engage the audience through interactive elements. Practice captivating presentation techniques.
	Handling Q&A Sessions	Develop strategies for confidently addressing questions. Handle challenging or unexpected questions with composure. Understand the dynamics of Q&A sessions.
4	Building Confidence and Overcoming Nervousness	Learn techniques for calming nerves and visualization. Practice positive self-talk for building confidence. Participate in exercises to overcome nervousness.
	Dealing with Presentation Challenges	Address unexpected challenges, such as technical issues. Adapt presentations on the spot. Turn mistakes into opportunities for growth.
5	Advanced Public Speaking Techniques	Explore advanced techniques like persuasion and humor. Understand how to adapt communication for different audience types. Practice advanced public speaking skills.
	Individual Speech Presentations and Feedback	Deliver prepared speeches to showcase learned skills. Receive constructive feedback from instructors and peers. Gain personalized tips for improvement.



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### Course Outcome

Participants will possess a solid theoretical foundation in public speaking principles, enhancing their overall understanding of effective communication.

1. Participants will demonstrate proficiency in advanced communication techniques, incorporating persuasion, influencing skills, and humour effectively.
2. Participants will exhibit increased confidence in public speaking and the ability to adapt to unexpected challenges, fostering resilience in professional settings.
3. Participants will be adept at applying theoretical knowledge in practical scenarios, honing their ability to communicate effectively in diverse situations.
4. Participants will develop a mindset for continuous improvement, utilizing personalized feedback to refine their communication skills over time.

**Coordinator**  
**Mr. Girisha G A**

**Mr. Vivekavardhana Reddy**  
**HOD**





## ABOUT COLLEGE

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## CONVENER

*Mr. Vivekavardhana Reddy,  
HOD CSE*

## COORDINATORS

*Mr. Ramesh B  
Assistant Professor,  
Department of CSE*

*Mrs. Tejaswini B N,  
Assistant Professor,  
Department of CSE*



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## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Added On Course  
On

## BLOCK CHAIN BASICS

January 17th to 21st 2022

## Resource Person

**Dr. Shwetha P**  
Associate Professor  
Global Academy of Technology  
Bangalore

## CONTACT DETAILS

**Mr. Ramesh B, Asst.Prof, CSE**  
PH: +91 99023 81611



## About The Department

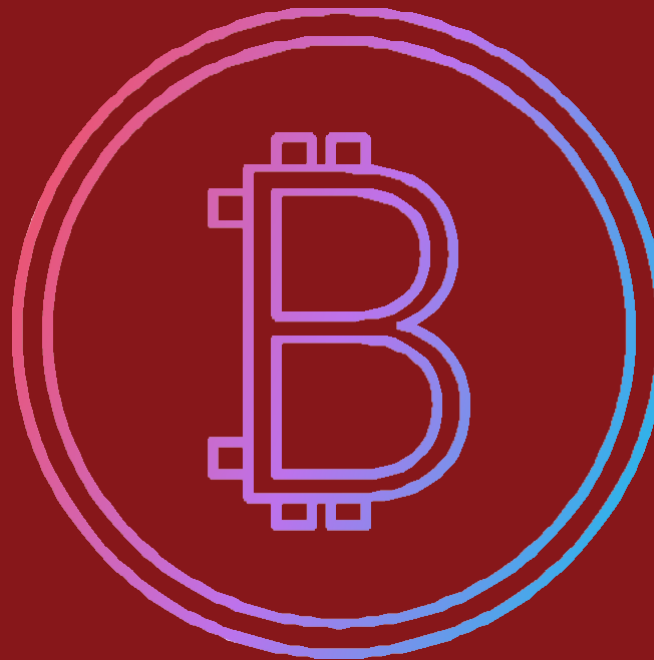
The Department of Computer Science & Engineering was started in the year 2001 is known for imparting Quality education and carrying out cutting edge research. In addition to the UG program, PG CSE program and Research facilities for Ph.D. The department offers undergraduate program and has a comprehensive curriculum on topics related to software and hardware with an emphasis on theoretical and practical learning. It has well equipped, state of the art laboratories supported by highspeed Internet and wireless networks.

## About the Course

Blockchain Basics" is designed to be the definitive introduction to blockchain technology, catering to both developers and non-developers. It provides a comprehensive overview of blockchain, ensuring that learners from diverse backgrounds can grasp the fundamental concepts and applications of this transformative technology.

## Course Outcomes

- ♦ Comprehensive Knowledge of Blockchain Technology
- ♦ Proficiency in Blockchain Architecture
- ♦ Capability to Develop and Deploy Smart Contracts
- ♦ Enhanced Security Awareness and Practices
- ♦ Insight into Industry Applications and Trends



## About Resource Person

Dr. Swetha P is a highly accomplished professional in the field of Computer Science and Engineering, with a strong academic background and extensive experience in teaching and research. She has progressed from a Lecturer to an Associate Professor at various prestigious institutions in Bengaluru, demonstrating her dedication and expertise in the field.

Dr. Swetha's academic achievements include completing a PhD in "Customer Churn Prediction in the Telecom domain using Machine Learning Algorithms," and obtaining M.Tech and B.E degrees in Computer Engineering and Information Science & Engineering, respectively. She has also published numerous papers in international journals and conferences, authored a textbook, and participated in academic activities such as reviewing for international conferences and attending faculty development programs



**Department of Computer Science and Engineering**  
**Add-on Course “Blockchain Basics”**  
**Syllabus**

**Course Objectives**

- Understand Blockchain Fundamentals: Gain a comprehensive understanding of blockchain technology and key concepts such as blocks, chains, and decentralization.
- Learn Blockchain Architecture and Mechanisms: Understand the components of blockchain architecture and various consensus mechanisms like Proof of Work and Proof of Stake.
- Develop Skills in Smart Contracts: Learn about smart contracts, including writing, deploying, and use cases for smart contracts.
- Explore Blockchain Security and Best Practices: Recognize the importance of security in blockchain and learn about best practices for smart contract development and auditing.
- Examine Blockchain Applications and Future Trends: Investigate real-world use cases of blockchain across different industries and explore emerging trends like NFTs and interoperability.

**Course Content**

Module	Content
1	- Introduction to Blockchain Technology - Key Concepts: Blocks, Chains, Decentralization - Evolution of Systems
	- Overview of Cryptocurrencies - Bitcoin, Altcoins, and Tokens
	- Components of Blockchain Architecture - Consensus Mechanisms: Proof of Work vs. Proof of Stake - Smart Contracts and DApps
	- Mining Process in Blockchain - Node Validation and Consensus - Forks and Network Upgrades
2	- Introduction to Ethereum - Ether (ETH) and Gas- Ethereum Virtual Machine (EVM)
	- What are Smart Contracts? - Writing and Deploying Smart Contracts - Use Cases for Smart Contracts
	- Importance of Security in Blockchain - Common Threats and Vulnerabilities - Private and Public Key Cryptography
	- Best Practices for Smart Contract Development - Auditing and Testing Smart Contracts - Security Tokens and Standards
3	- Blockchain Use Cases in Different Industries - Real-world Examples and Case Studies



	<ul style="list-style-type: none"><li>- Scalability Solutions</li><li>- Interoperability between Blockchains</li><li>- NFTs and Future Trends</li></ul>
	<p>What are Smart Contracts?</p> <ul style="list-style-type: none"><li>- Writing and Deploying Smart Contracts</li><li>- Use Cases for Smart Contracts</li></ul>
4	<ul style="list-style-type: none"><li>- Introduction to Blockchain Technology</li><li>- Key Concepts: Blocks, Chains, Decentralization</li><li>- Evolution of Systems</li></ul>
	<ul style="list-style-type: none"><li>- Overview of Cryptocurrencies</li><li>- Bitcoin, Altcoins, and Tokens</li></ul>
	<ul style="list-style-type: none"><li>- Components of Blockchain Architecture</li><li>- Consensus Mechanisms: Proof of Work vs. Proof of Stake</li><li>- Smart Contracts and DApps</li></ul>
5	<ul style="list-style-type: none"><li>- Mining Process in Blockchain</li><li>- Node Validation and Consensus</li><li>- Forks and Network Upgrades</li></ul>
	<ul style="list-style-type: none"><li>- Introduction to Ethereum</li><li>- Ether (ETH) and Gas</li><li>- Ethereum Virtual Machine (EVM)</li></ul>
	<ul style="list-style-type: none"><li>- Q&amp;A and Discussion</li><li>- Course Recap and Concluding Remarks</li></ul>

**Course Outcomes**

1. Comprehensive Knowledge of Blockchain Technology: Participants will have a thorough understanding of blockchain technology and its foundational concepts.
2. Proficiency in Blockchain Architecture: Participants will be proficient in blockchain architecture, consensus mechanisms, and mining processes.
3. Capability to Develop and Deploy Smart Contracts: Participants will be able to write, deploy, and utilize smart contracts on the Ethereum platform.
4. Enhanced Security Awareness and Practices: Participants will be knowledgeable about blockchain security threats, vulnerabilities, and best practices.
5. Insight into Industry Applications and Trends: Participants will gain insight into various industry applications of blockchain technology and future trends.

**Coordinator**  
**Mr Ramesh B**

**Mr. Vivekavardhana Reddy**  
**HOD**



**CITY**  
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## Department of Basic Science

### A value-added course on Entrepreneurship and innovation

#### Brochure

	Chief Patron	About College
 <p><b>CITY ENGINEERING COLLEGE</b> (Approved by AICTE New Delhi Affiliated by VTU, Belagavi) Near Metro Station, Doddakallasandra Bangalore – 560 062.</p> <p><b>Value added Course on</b> <b><u>Entrepreneurship and Innovation</u></b></p> <p><b>Organized by</b> “Department of Basic Science” City Engineering College Bangalore-560062</p> <p>Date: 14-12-21 to 18-12-21 Venue : Seminar Hall</p>  <a href="http://www.cityengineeringcollege.ac.in">www.cityengineeringcollege.ac.in</a>	<p><b>Dr. K.R. Paramahamsa</b> <b>Chairman</b> AMC, City, Brooklyn Group of <b>Institutions</b> Bangalore</p> <p><b>Patrons</b> <b>Dr H N Tippeswamy</b> <b>Principal</b> City Engineering college Bangalore</p> <p><b>Convenor</b> <b>Dr. Jyothi. P</b> HOD, Dept of Mathematics City Engineering College</p>	<p>City Engineering College, Bangalore affiliated to Visvesvaraya Technological University (VTU) is centrally located in Bangalore. The College has expanded over the last 19 years with sophisticated infrastructure as a part of the Institution's commitment to provide higher quality education in the area of Engineering . The highly facilitated landmark building – provides a perfect ambience for creativity and learning. City Engineering College is known for its academic excellence, friendly welcoming atmosphere and community spirit. Over large number of full time students study here in a wide range of programs. It is a center of talented, experienced teachers who inspire and energize the students to achieve the best.</p>



About Applied Science and Humanities	Expert Speaker for the Program	Entrepreneurship and Innovation
<p>The Applied Science and Humanities Department in City Engineering College serves as a fundamental pillar, providing essential knowledge in fundamental scientific disciplines such as mathematics, physics, and chemistry. This Department plays a critical role in equipping engineering students with the core scientific principles and analytical skills necessary for their specialized engineering studies. Faculty members in the Applied Science Department typically engage in both teaching and research, contributing to advancements in their fields and enhancing the overall academic environment. The department often offers courses that support and complement the various engineering programs, ensuring that students have a strong scientific grounding to solve complex engineering problems effectively.</p>	<p><b>Dr. Mohammed Mathenulla Shariff</b> Assistant Professor Islamiah Institute of Technology Bangalore-76</p> <hr/> <p><b>Coordinators</b></p> <p><b>Mrs. Nagashree G</b> Assistant Professor Dept. of Physics, CEC</p> <p><b>Mrs. Sunitha N</b> Assistant Professor Dept. of Chemistry, CEC</p>	 <p>WHAT IS ENTREPRENEURSHIP?</p> <p>A value-added course on Entrepreneurship and innovation can equip participants with the knowledge, skills, and practical experience needed to excel in these dynamic fields. Through a blend of theoretical insights, hand-on activities, and real-world applications, participants will learn to identify opportunities, develop viable business models, and drive innovation in various contexts. Ensure that participants gain a thorough understanding of both the theoretical and practical aspects of entrepreneurship and innovation, preparing them to navigate and succeed in these exciting fields.</p>

Course Coordinator  
Mrs. Sunitha N  
Department of Chemistry

HOD  
Dr. Sujatha K  
Department of Physics

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Principal  
Dr. H N Thippeswamy  
CEC, Bangalore

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## Department of Basic Science

### Value Added course on Entrepreneurship and innovation

#### Course Content

**Module 1:** Introduction to Entrepreneurship, definitions and importance, Characteristics of Successful Entrepreneurs.

**Module 2:** Idea generation and evaluation, Mind mapping, Scamper Technique, Market Potential, Feasibility Analysis, SWOT analysis.

**Module 3:** Business Planning, Market Analysis, Sales strategies, Financial Projections, Developing a Business Model, Business Model Canvas.

**Module 4:** Market research and Customer insight, Tools and Techniques for Data Collection, Understanding Customer Needs, Creating Customer Personas.

**Module 5:** Funding and Financial Management, Venture Capital, Financial Management Principles, Cash Flow Management, Financial Statements and Projections.

**HOD**  
Dr. K Sujatha

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**PRINCIPAL**  
Dr. H N Thippeswamy

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## Department of Basic Science

### Value Added course on Entrepreneurship and innovation

#### Course Objectives

The course objectives are:

- Equip students with the knowledge and skills to start and grow businesses that contribute to the economy, creating wealth and improving the overall economic landscape.
- Train future entrepreneurs to build businesses that generate employment, addressing unemployment and providing stable career opportunities.
- Encourage innovative thinking to solve pressing societal challenges, such as environmental issues, healthcare, and education, through entrepreneurial ventures.
- Teach students how to develop competitive business strategies that enhance market efficiency and provide better choices for consumers.
- Promote the use of cutting-edge technology and innovative practices to boost productivity and drive technological progress within industries.

#### Course Outcomes

The students will be able to:

- Entrepreneurship stimulates economic activity by creating new businesses, which in turn generate income, increase GDP, and enhance overall economic health.
- New ventures often lead to the creation of new job opportunities, reducing unemployment rates and providing livelihoods for many people.
- Innovation drives businesses to improve their products, services, and processes, leading to increased competitiveness in local and global markets.
- The introduction of innovative products and services can improve the quality of life by making goods and services more accessible, affordable, and efficient.
- Entrepreneurs often identify and address specific community needs and problems through innovative solutions, leading to social and economic improvements in local areas.

Course Coordinator  
Prof. Nagasree G

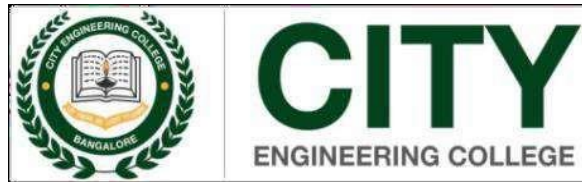
HOD  
Dr. K Sujatha

Principal  
Dr. H N Thippeswamy

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Doddakallasandra, Bangalore-560061

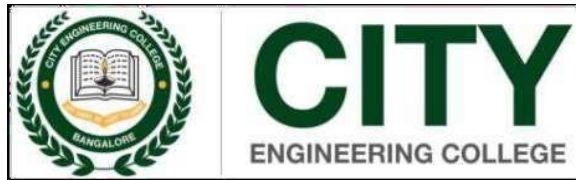
**Department of Civil Engineering**  
**Course on Advanced Survey Instruments**  
**Brochure**

<p style="text-align: center;"><b>CITY ENGINEERING COLLEGE</b>          (Approved by AICTE New Delhi &amp; Affiliated by VTU Belagavi)          Near Metro Station, Doddakallasandra          Bangalore - 560 062.</p> <p style="text-align: center;"><b>Value Added Course on          Advanced Survey Instruments</b></p> <p style="text-align: center;">Date: 12-12-21 to 17-12-21          Venue: Seminar Hall</p> <p style="text-align: center;"><b>Organized by</b>          Department of Civil Engineering          City Engineering College          Bangalore-560062.</p> <p style="text-align: center;"> <a href="http://www.cityengineeringcollege.ac.in">www.cityengineeringcollege.ac.in</a></p>	<p style="text-align: center;"><b>Advisory Committee</b></p> <p style="text-align: center;"><u>Chief Patron</u></p> <p style="text-align: center;"><b>Dr. K.R. Paramahansa</b>          MBA, LL.B., Ph.D. (USA), D.Litt.          Honorable Chairman          AMC - City Group of Institutions</p> <p style="text-align: center;"><u>Patrons</u></p> <p style="text-align: center;"><b>Smt. Geetha Paramahansa</b>          Honorable Vice Chairperson          AMC - City Group of Institutions</p> <p style="text-align: center;"><b>Ms. Monica Kalluri</b>          Honorable Vice - President          AMC - City Group of Institutions</p> <p style="text-align: center;"><b>Mr. Rahul Kalluri</b>          Honorable Executive - President          AMC - City Group of Institutions</p> <p style="text-align: center;"><b>Dr. Thippeswamy H N</b>          Principal, City Engineering College, Bangalore.</p> <p style="text-align: center;"><b>Dr. Jyothi, P.</b>          Vice Principal, HOD, Dept of Mathematics, CTC</p> <p style="text-align: center;"><u>Convenor</u></p> <p style="text-align: center;"><b>Dr. Thippeswamy H N</b>          Professor and Head, Civil Engineering Department, CTC</p> <p style="text-align: center;"><u>Coordinator</u></p> <p style="text-align: center;"><b>Mr. Vinay Kumar S N</b>          Assistant Professor, Dept of Civil Engineering, CTC</p>	<p style="text-align: center;"><b>About College</b></p> <p>City Engineering College, Bangalore affiliated to Technological (VTU) is centrally located in Bangalore. The College has expanded over the last 19 years with sophisticated infrastructure as a part of the Institution's commitment to provide higher quality education in the area of Engineering. The highly facilitated landmark building – provides a perfect ambience for creativity and learning. City Engineering College is known for its academic excellence, friendly welcoming atmosphere and community spirit. Over large number of full time students study here in a wide range of programs. It is a center of talented, experienced teachers who inspire and energize the students to achieve the best.</p>
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<p style="text-align: center;"><b>About the Civil Engineering Department</b></p> <p>The Department of Civil Engineering was started in the year 2011 with an intake of 60 and further increased to 120 in the year 2014 to impart Quality Technical Education to the aspirants of Civil Engineering. The Department has well-stocked library, state-of-the-art Class rooms and Laboratories. The Department has formed Club - RACE - Royal Association of Civil Engineers. The aim of the club is to bridge the gap between Academics and the Industry. RACE in association with the Experts in the Field/ Industry has arranged several programs, workshops, Industrial Visits for the benefit of faculty and the students and to keep them abreast with the latest knowledge and industry challenges.</p>	<p style="text-align: center;"><b>Expert Speakers for the Program</b></p> <p style="text-align: center;"><b>Mr. Yashwanth          Lawrence &amp; Mayo</b>          No.76/1, 2nd Floor AMR Complex,          Mission Rd, Sudhama Nagar,          Bengaluru</p>	<p style="text-align: center;"><b>About Plumbing</b></p> <p>A Advanced Survey Instruments, value-added course is designed to helps the student to have an understanding about Advanced Survey Instruments.</p> <p>This course aims to make students aware with different advance surveying methodologies applied to carry out large scale survey works as modern instruments have largely changed the approach to survey works with the principles being same, to provide knowledge of Total Station &amp; advanced surveying instruments, develop skills in using Total Station &amp; advanced surveying instruments and analyse data, develop ability to transform basic concept of surveying to field practice.</p>
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Doddakallasandra, Bangalore-560061

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**Department of Civil Engineering**  
**Course on Advanced Survey Instruments**  
**Course Content**

**Module 1:** Introduction to Angle and Distance Measurements, Measure Remote Distance and Elevation.

**Module 2:** Station Establishment and Orientation, Introduction to Co-ordinate systems.

**Module 3:** Introduction to total station and basic features, Setting of total station & Practice for station setup.

**Module 4:** Creation of new job, points data collection, instrument shifting techniques, Field survey.

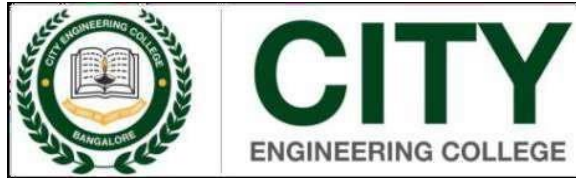
**Module 5:** Exporting field data to computer & Hands on session for processing Field Data in AutoCad, Stakeout task & Practice session.

Mr. Vinay Kumar S N  
Course Coordinator  
Assistant Professor  
Department of Civil Engineering

Dr. Thippeswamy H N  
HOD  
Department of Civil Engineering

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PRINCIPAL  
CITY ENGINEERING COLLEGE  
KUMARIBUD MAIN ROAD, BANGALORE - 560 061



Doddakallasandra, Bangalore-560061

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**Department of Civil Engineering**  
**Course on Advanced Survey Instruments**  
**Course Objectives**

After completion of the course, the trainees should be able to:

1. To make students aware with different advance surveying methodologies applied to carry out large scale survey works as modern instruments have largely changed the approach to survey works with the principles being same.
2. To provide knowledge of Total Station & advanced surveying instruments.
3. Develop skills in using Total Station & advanced surveying instruments and analyse data.
4. Develop ability to transform basic concept of surveying to field practice.

**Course Outcomes**

The students will be able to:

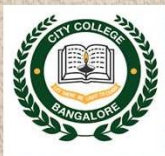
1. Use total station in the field of civil engineering land survey.
2. Summarize the basic principles of GPS and GIS in civil engineering.
3. Show effectiveness of modern surveying instruments to improve accuracy and to save time and for surveying operations.
4. Manage the suggested or identified constructional problems, solve in teams, in order to improve future problem-solving ability and able to present it.

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Course Coordinator  
Assistant Professor  
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CITY ENGINEERING COLLEGE  
KANDASWARI MAIN ROAD, BANGALORE - 560 061



## CITY ENGINEERING COLLEGE

(Approved by AICTE New Delhi & Affiliated by VTU,  
Belagavi)  
Near Metro Station, Doddakallasandra  
Bangalore – 560 062.

### Value Added Course on CRDi

Date: 21-09-21 to 25-09-21  
Venue : Seminar Hall

#### Organized by

Department of Mechanical Engineering  
City Engineering College  
Bangalore-560062



[www.cityengineeringcollege.ac.in](http://www.cityengineeringcollege.ac.in)

### Advisory Committee

#### Chief Patron

#### Dr. K R Paramahamsa

MBA, L.L.B., Ph.d. (USA), D. Litt,  
Honorable Chairman  
AMC – City Group of Institutions.

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AMC – City Group of Institutions.

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Honorable Vice – President  
AMC – City Group of Institutions.

#### Mr. Rahul Kalluri

Honorable Executive – President  
AMC – City Group of Institutions.

#### Dr. V.S. Ramamurthy

Principal, City Engineering college

#### Dr. Jyothi. P

Vice Principal, HOD,  
Dept of Mathematics, CEC.

### About College

City Engineering College, Bangalore affiliated to Visvesvaraya Technological University (VTU) is centrally located in Bangalore. The College has expanded over the last 19 years with sophisticated infrastructure as a part of the Institution's commitment to provide higher quality education in the area of Engineering. The highly facilitated landmark building – provides a perfect ambience for creativity and learning. City Engineering College is known for its academic excellence, friendly welcoming atmosphere and community spirit. Over large number of full time students study here in a wide range of programs. It is a center of talented, experienced teachers who inspire and energize the students to achieve the best.

### About the Department of Mechanical Engineering

The Department of Mechanical Engineering was established in 2005 with an annual intake of 120 students in the undergraduate Programme. The Department of Mechanical Engineering has state-of-the-art laboratories; these laboratories not only satisfy the curriculum requirements of the students very lucidly but also provide additional facilities to enhance the practical knowledge. The department consists of a team of well qualified teaching staff having Master degrees and Doctorates. The staff members of the Mechanical Department have taken up projects funded by external agencies like KSCST, VGST and VTU. The department received a grant of Rs. 5 Lakh in the year 2019 from VGST to carry out research on Advanced Materials in Green Energy. The Department also has a Research center approved by VTU.

### Expert Speakers for the Program

#### **Dr.Nanda Kumar MB**

Associate Professor

Dayananda Sagar College of Engineering  
Bengaluru

#### **Convener**

#### **Dr. S. Karunakara**

Professor and Head,  
Department of Mechanical Engineering.

#### **Coordinator**

#### **Mr. Harsha Vardhan U**

Assistant Professor,  
Department of Mechanical Engineering.

### About CRDi

The Common Rail Direct Injection (CRDI) system stands as a cornerstone of modern diesel engine technology, revolutionizing the efficiency, performance, and emissions characteristics of these powertrains. By precisely controlling the fuel delivery process through a high-pressure common rail, the CRDI system has transformed combustion dynamics, resulting in enhanced power output, reduced fuel consumption, and decreased emissions. This innovative approach has reshaped the landscape of diesel engines, ushering in an era of cleaner, more fuel-efficient, and environmentally conscious transportation.



## Department of Mechanical Engineering

### Course on CRDi

#### Course Content

**Module 1:** Engine Systems & Components: Fuel System (SI Engine), Carburetion & Injection, process & parameters, properties of A/F mixture,

**Module-2:** Requirements of A/F ratios as per different operating conditions, Carburetors, types, Aircraft carburettor, comparison of Carburetion & injection, F/A ratio calculations.

**Module-3:** CI engine: Mixture requirements & constraints, Method of injection, Injection systems, CRDI etc.

**Module-4:** System components, pumps injectors. Ignition system: Conventional & Modern ignition systems Magneto v/s Battery, CB point v/s electronic ignition,

**Module-5:** Fuel Ignition Energy requirements. Spark advance, centrifugal, vacuum Firing order, spark plugs.

**Course Coordinator**

Mr. Harsha Vardhan U  
Assistant Professor  
Department of Mechanical Engineering

**HOD**

Dr. S. Karunakara  
HOD  
Department of Mechanical Engineering



## **Department of Mechanical Engineering**

### **Course on CRDi**

#### **Objective:**

- To understand the deficiencies of conventional diesel engines which were sluggish, noisy and poor in performance when implemented especially in passenger vehicles.
- Most modern engine's fuel systems use 'Common Rail Direct Injection' or CRDi which is an advanced technology. Specifically, the term 'CRDi' commonly refers to diesel engines

#### **Course Outcomes**

Upon completion of the course students should be able to:

- Apply diesel engine knowledge to diesel fuel injection systems functions and how they relate to engine operation and performance.
- Competently troubleshoot, evaluate and repair diesel fuel injection systems.
- Disassemble, test, and reassemble fuel injection components.
- Test diesel engines for fuel system malfunctions.
- Apply knowledge of diesel fuels and fuel injection systems and how they relate to engine performance.
- Research and locate repair literature.

#### **Course Coordinator**

Mr. Harsha Vardhan U  
Assistant Professor  
Department of Mechanical Engineering

#### **HOD**

Dr. S. Karunakara  
HOD  
Department of Mechanical Engineering



# CITY ENGINEERING COLLEGE

Approved by AICTE New Delhi and affiliated by VTU, Belagavi

Doddakallasandra, Off Kanakapura Main Road,  
Next to Gokulam Apartment, Bangalore – 560062

Five-day Add-on course  
“Python using Arduino 3.0”  
(23/08/2021 – 27/08/2021)

Organized by

Department of Electronics & Communication  
Engineering  
City Engineering College  
Bangalore 560062

## Chief Patron

Dr. K.R. Paramahamsa  
Chairman,  
MBA, Ph.D. (USA). D. Lit  
AMC – City group of Institutions, Bengaluru.

## Patrons

Dr. Thippeswamy H N  
Principal, CEC, Bengaluru

Dr. Jyothi P  
Vice- Principal, CEC, Bengaluru

Dr. Sowmya Naik P.T.  
Executive Officer, CEC, Bengaluru

**Convener**  
G.S Mallikarjuna  
HOD, ECE, CEC, Bengaluru

**Coordinator**  
Dr. Shalini Prasad  
Professor  
Dept. of Electronics & Communication Engineering  
Mobile: +91 9449445388  
Email: shaliniprasad5@gmail.com

## About the college

City Engineering College, Bangalore affiliated To Visvesvaraya Technological University (VTU) is centrally located in Bangalore. The College has expanded over the last 19 years with sophisticated infrastructure as a part of the Institution's commitment to provide higher quality education in the area of Engineering. The highly facilitated landmark building – provides a perfect ambience for creativity and learning. City Engineering College is known for its academic excellence, friendly welcoming atmosphere and community spirit. Over large number of full-time students study here in a wide range of programs. It is a centre of talented, experienced teachers who inspire and energize the students to achieve the best.





## About the ECE Department

The department of Electronics and communication engineering was started in the year 2001 is known for imparting quality education. The department has good infrastructure with experienced faculties. Organizes industrial visits, workshops, technical talks, project exhibitions and training programs regularly which helps in bridging the gap between academics and industry.

## About the course

Arduino 3.0 is a powerful & versatile platform that brings the worlds of hardware and software together, making it easier than ever to build interactive projects. By combining Arduino's user-friendly microcontroller boards with Python's robust programming capabilities, developers and hobbyists can create sophisticated systems with ease. Python's simplicity and readability make it an excellent choice for controlling Arduino projects, allowing for rapid prototyping and experimentation. This synergy opens up a wide range of possibilities, from automating home systems to building complex robotics. Python with Arduino 3.0 course provides a dynamic and engaging way to explore electronics and programming.

## Resource Person



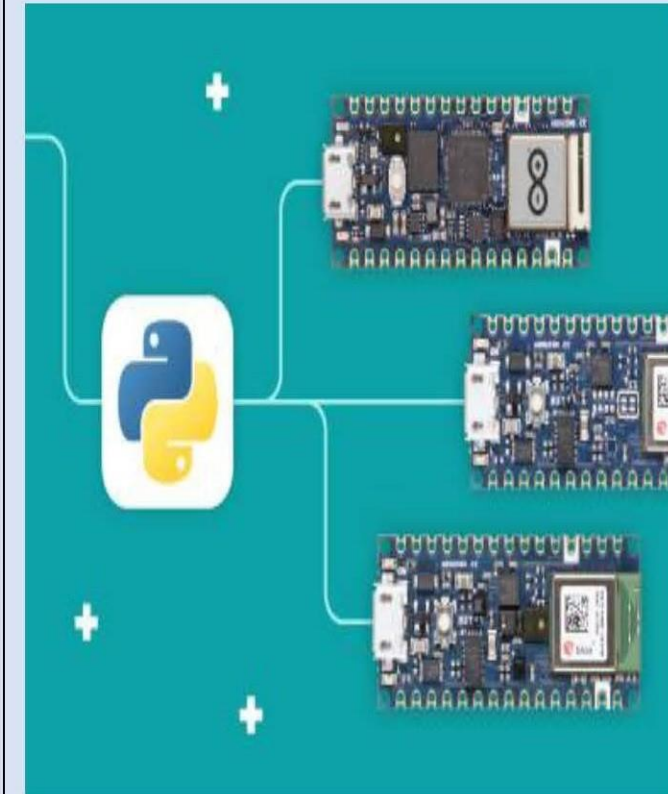
**Mr. Skanda Kumar T R**  
Software Engineer  
BOSCH India Pvt. Ltd.

Experience in design, development, integration and testing of Automotive Embedded Software for Electronic control units (ECUs) for Passenger Vehicle.

Good Experience working with Germany, South Korea and Vietnam Counterparts to handle system and SW requirements for Korean OEM.

## Guidelines

A test (assessment questions) will be conducted by the coordinators at the end of the course. The certificates will be issued to those participants who have attended the course with minimum 80% attendance and scored minimum 60% marks in the test.







**CITY**  
ENGINEERING COLLEGE


DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING  
“Add-On course on Python using Arduino 3.0”

**Objective:**

Arduino 3.0 is a powerful & versatile platform that brings the worlds of hardware and software together, making it easier than ever to build interactive projects. By combining Arduino’s user-friendly microcontroller boards with Python's robust programming capabilities, developers and hobbyists can create sophisticated systems with ease. Python's simplicity and readability make it an excellent choice for controlling Arduino projects, allowing for rapid prototyping and experimentation. This synergy opens up a wide range of possibilities, from automating home systems to building complex robotics. Python with Arduino 3.0 course provides a dynamic and engaging way to explore electronics and programming.

  
Dr. Shalini Prasad  
Coordinator

  
G S Mallikarjuna  
HOD, ECE

  
PRINCIPAL  
CITY ENGINEERING COLLEGE  
Kanakapura Main Road, BANGALORE - 560 061  
H N Thippeswamy  
Principal



DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

“Add-On course on Python using Arduino 3.0”

**Syllabus:**

**1. Introduction to Virtualization**

Overview of Virtualization Concepts

Virtualization Platforms (e.g., PyCharm for Development Environments)

Basic Virtual Machine (VM) Operations: Starting, Stopping, and Pausing

**2. Advanced Virtualization Management**

Snapshots and Cloning of Virtual Machines

Resource Allocation in Virtualized Environments

Virtualization Best Practices

**3. Introduction to Arduino Development**

Overview of Arduino Development Tools

Basic Arduino Programming and Sample Test Codes

Introduction to Firmata Protocol

**4. Firmata Protocol and Arduino Configuration**

Setting Up and Managing Firmata on Arduino

Storage Management in Arduino Environments

Configuring and Mapping Storage Constraints

**5. Notification Techniques and Optimization**

Trigger Notifications Techniques

Best Practices for Optimizing Arduino Setups

**6. Arduino Sensors and Switches**

Introduction to Arduino Sensors and Switches

Services and Capabilities of Arduino Sensors

**7. Creating Higher-Level Applications**

Developing Higher-Level Applications with Arduino



**CITY**  
ENGINEERING COLLEGE

Navigating the Portal for VM Creation and Management

VM Extensions, Customization, Availability Sets, and Scaling Options

## **8. Integration with Python**

Developing Applications Using Arduino and Python


Measuring and Processing Sensor Data with Python


## **9. Advanced Firmata Protocol and Storage Management**


Firmata Protocol Capabilities and Advanced Features

Storage Options: Queue and File Storage

Working with Arduino Libraries and Databases

  
Dr. Shalini Prasad  
Coordinator

  
G S Mallikarjuna  
HOD, ECE

  
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