



# GEETHANJALI

COLLEGE OF ENGINEERING & TECHNOLOGY

UGC AUTONOMOUS INSTITUTION

ACCREDITED BY NAAC, APPROVED BY AICTE AND  
AFFILIATED TO JNTUH

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DEPARTMENT OF CIVIL ENGINEERING

# PRAGATHI

VOLUME 6, ISSUE 2, JANUARY TO JUNE 2022



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## CHAIRMAN'S MESSAGE

It is a matter of great pleasure and satisfaction that the department of Civil Engineering has come up with the new volume of Newsletter PRAGATHI. I believe that the newsletter will serve as a window through which the complete profile of the academic and co-curricular activities, achievements and progress made during the period from jan to june of 2022 can be viewed. Best wishes for the success and bright future of all the students and faculty members.

Sri. G. R. Ravinder Reddy

CHAIRMAN

## PRINCIPAL'S MESSAGE

I heartily congratulate the department of Civil engineering for releasing new volume of newsletter. This helps faculty and students to display their contributions and achievements. I wish all the good luck for the department.



*Dr. Udaya Kumar Susarla  
M. E., Ph.D  
Principal*



## VISION OF THE DEPARTMENT

The Civil Engineering Department is committed to excellence, quality, and sustained growth while offering our students an outstanding and rigorous education in an environment that supports intellectual growth while meeting 21st century demands.

## MISSION OF THE DEPARTMENT

- ❖ To provide high-quality educational experience for students in the field of Civil Engineering with strong emphasis on professional ethics, social and environmental responsibilities.
- ❖ To provide infrastructure and facilities to meet the latest technological requirements.
- ❖ To provide research opportunities for faculty and students.
- ❖ To have a continuous interaction with Industry with an emphasis on R and D.
- ❖ To produce engineers capable of critical thinking, devoted to lifelong learning, and highly sought after by employers.

## PROGRAMME EDUCATIONAL OBJECTIVES

Program Educational Objectives (PEOs) are broad statements that describe the career and professional accomplishments that the program is preparing the graduates to achieve within three to five years of graduation. The PEOs for Civil Engineering program are

**PEO 1:** Graduates will be technically adept in mathematical, scientific, and engineering fundamentals to pursue their chosen profession or pursue advanced studies with a commitment to lifelong learning for professional development.

**PEO 2:** Graduates will be able to apply problem-solving skills to various engineering problems that involve management of medium-sized projects to large-scale projects using modern equipment or systems, and work on multidisciplinary projects in multicultural environment demonstrating interpersonal skills.

**PEO 3:** Graduates will exhibit creativity, innovation, and professional ethics with leadership qualities towards societal development.

## PROGRAMME OUTCOMES

Program Outcomes (POs) describe what students are expected to know and be able to do by the time of graduation to accomplish Program Educational Objectives (PEOs).

The Program Outcomes for Civil Engineering students are:

Graduates of the Civil Engineering Programme will be able to:

**PO 1: Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

**PO 2: Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

**PO 3: Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

- PO 4: Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO 5: Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- PO 6: The Engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO 7: Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO 8: Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice. Apply ethical principles and commit to professional ethics and responsibilities and norms of the Civil Engineering practice.
- PO 9: Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO 10: Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO 11: Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO 12: Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

### **PROGRAM SPECIFIC OUTCOMES (PSOS)**

**PSO 1:** Apply knowledge in core areas of Civil Engineering such as Structural, Geotechnical, Water Resources, Transportation and Environmental Engineering to Civil Engineering practice.

**PSO 2:** Utilize Civil Engineering principles that are appropriate to produce detailed drawings, design reports, quantity and cost estimates, specifications, contracts and other documents appropriate for the design, construction, operations and maintenance of Civil Engineering projects.

**PSO 3:** Shall interact and collaborate with stakeholders; execute quality construction works applying Civil Engineering tools namely, Total Station, Global Positioning System (GPS), ArcGIS, AutoCAD, STAAD and other necessary tools.

# PLACEMENT DETAILS FOR THE A.Y 2021 - 22

S.No	Roll Number	Name Of The Candidate	Name Of The Company	Salary Package
1	18R11A0120	Gokavarapu Sai Hanisha	Acuvate Software Pvt Ltd	3.60LPA
2	18R11A0137	Monaboti Neelima	Savanties	3.50LPA
3	18R11A0132	Lyagala Vasanth	Savanties	3.50LPA
4	18R11A0182	Kadari Mahesh	Savanties	3.50LPA
5	19R15A0104	Gourraju Suresh	Savanties	3.50LPA
6	18R11A0121	Gummadavelli Sneha	Savanties	3.50LPA
7	18R11A0175	Gattu Sumanth Goud	Savanties	3.50LPA
8	18R11A01A6	Parankusham Yeshwanth	Savanties	3.50LPA
9	18R11A01A9	Perumandla Vinay Bhargav	Savanties	3.50LPA
10	18R11A0194	Maredukonda Sai Karthika	Savanties	3.50LPA
11	18R11A01B7	Yaranagula Mahendar	Savanties	3.50LPA
12	18R11A0102	Akella.N S V S L Krishnaja	Savanties	3.50LPA
13	18R11A0147	Ramidi Snigdha	Savanties	3.50LPA
14	18R11A0120	Gokavarapu Sai Hanisha	Savanties	3.50LPA
15	18R11A0180	Hanumandla Mani Mohith	Savanties	3.50LPA
16	18R11A0102	Akella.N S V S L Krishnaja	Verzeo	3.50LPA
17	18R11A01A9	Perumandla Vinay Bhargav	Ridh Constructions	2.00LPA
18	18R11A0156	U Harsha	Ridh Constructions	2.00LPA
19	19R15A0104	Gourraju Suresh	Ridh Constructions	2.00LPA
20	19R15A0111	Ramavath Vinod Kumar	Ridh Constructions	2.00LPA
21	19R15A0102	Ambati Jagruthi	Ridh Constructions	2.00LPA
22	18R11A0120	Gokavarapu Sai Hanisha	Ridh Constructions	2.00LPA
23	18R11A0147	Ramidi Snigdha	Ridh Constructions	2.00LPA
24	18R11A01B1	S Sai Roopa	Ridh Constructions	2.00LPA
25	18R11A0115	Damalla Udayasri	Ridh Constructions	2.00LPA
26	18R11A0137	Monaboti Neelima	Ridh Constructions	2.00LPA
27	19R15A0108	Gudla Vyshnavi	Ridh Constructions	2.00LPA

28	18R11A0114	D G Harika	Ridh Constructions	2.00LPA
29	18R11A0107	Bontha Megana	Ridh Constructions	2.00LPA
30	18R11A0112	Chennaboina Rakesh	Ridh Constructions	2.00LPA
31	18R11A0110	C Venkata Sri Dikshita	Ridh Constructions	2.00LPA
32	18R11A0159	Yellu Sri Charan Reddy	Intellicarts Infosolutions	2.40LPA
33	18R11A0147	Ramidi Snigdha	Intellicarts Infosolutions	2.40LPA
34	18R11A0172	Domathoti Celina Grace Harrison	Intellicarts Infosolutions	2.40LPA
35	18R11A0123	Konkati Ajay Kumar	Intellicarts Infosolutions	2.40LPA
36	19R15A0104	Gourraju Suresh	Intellicarts Infosolutions	2.40LPA
37	19R15A0111	Ramavath Vinod Kumar	Intellicarts Infosolutions	2.40LPA
38	18R11A0102	Akella.N S V S L Krishnaja	Intellicarts Infosolutions	2.40LPA
39	18R11A0145	Rapolu Karthik Reddy	Byjus	10.00LPA
40	18R11A0127	Katakam Shivani	Smart Ims	4.19LPA
41	18R11A0102	Akella.N S V S L Krishnaja	Smart Ims	4.19LPA
42	18R11A0137	Monaboti Neelima	Smart Ims	4.19LPA
43	18R11A0137	Monaboti Neelima	Milekal Steels	3.50LPA
44	18R11A0110	C Venkata Sri Dikshita	Milekal Steels	3.50LPA
45	19R15A0110	Bairi Prudviraj	Milekal Steels	3.50LPA

## ACADEMIC TOPPERS

The students who secured top ranks were heartily congratulated.  
List of the toppers for the academic year: 2020 – 2021



Akula Vijay kumar  
17R11A0150



R. Kalyani  
17R11A0136



M. VIKAS  
17R11A0123



## ***STUDENT PARTICIPATIONS***

- J. Arunreddy., B. Tech 4<sup>th</sup> year has participated in Cad – a –thon held at GCET on 28/04/2022 and awarded FIRST prize.
- A. Sandeep and J. Arun Reddy, 4<sup>th</sup> year B. Tech has participated in poster presentation held at GCET on 28/04/2022.
- Ch. Sanjay, J. Arun Reddy has participated in Quiz competition held on 28/04/2022 at GCET and awarded FIRST prize.
- K. Sai Rohit, B. Tech, 4<sup>th</sup> year had participated in a workshop on Short Film Incubation on 09/04/2022.

### **FDP/ WEBINARS / WORKSHOPS And CONFERENCES Participated By Faculty:**

S. No	Name	Name Of The Program	Title Of The Program	Dates Attended	Sponsored Body/ Institute
1.	V. Abdul Raffi	NPTEL Course	Geotechnical Engineering - 1	Jan – Apr 2022	IIT, Bombay
2.	Dr. V V Praveen Kumar	Course	Experimental Modal Analysis Applications In Civil And Mechanical Engineering Systems	31-01-2022 To 04-02-2022	Nit, Warangal
3.	G. Raju	FDP	Design And Construction Practices Of Sustainable Pavements	14-02-2022 To 19-02-2022	GMRIT, Rajam
4.	Dr. K. Sri Lakshmi	UGC-sponsored Webinar	Webinar On NEP 2020 Implementation Plan: Outcome Based Education And Academic Bank Of Credits	28-06-2022	Jntuh
5.	K.Keerthi	UGC-sponsored Webinar	Webinar On NEP 2020 Implementation Plan: Outcome Based Education And Academic Bank Of Credits	28-06-2022	Jntuh
6.	V.Navodaya	UGC-sponsored Webinar	Webinar On NEP 2020 Implementation Plan: Outcome Based Education And Academic Bank Of Credits	28-06-2022	Jntuh

S.No	Name	Name Of The Program	Title Of The Program	Dates Attended	Sponsored Body/ Institute
7.	K. Rupa Sri	FDP	Computer Diligence In Civil Engineering And Applications	21-03-2022 To 30-03-2022	Sreenidhi Institute Of Science And Technology, Hyderabad
8.	Dr. K. Sri Lakshmi	UGC-sponsored Webinar	Webinar On NEP-2020 Implementation Plan Multiple Entry And Exit System	29-06-2022	Jntuh
9.	K.Keerthi	UGC-sponsored Webinar	Webinar On NEP-2020 Implementation Plan Multiple Entry And Exit System	29-06-2022	Jntuh
10.	V.Navodaya	UGC-sponsored Webinar	Webinar On NEP-2020 Implementation Plan Multiple Entry And Exit System	29-06-2022	Jntuh
11.	K.Keerthi	UGC-sponsored Webinar	Webinar On Academic Research Integrity In The Context Of NEP-2020	30-06-2022	Jntuh
12.	V.Navodaya	UGC-sponsored Webinar	Webinar On Academic Research Integrity In The Context Of NEP-2020	30-06-2022	Jntuh

### **INDUSTRIAL VISITS**

- **A Field Visit to Hella Infra Market Pvt.Ltd.**

The students of 2<sup>nd</sup> year from the department of civil engineering along with the faculty and head of the department has visited to Hella infra market pvt.ltd. on 18<sup>th</sup> june 2022 which is situated at uppal circle. The visit was delivered by Mr Naveedth, quality control engineer at RMC and the faculty members coordinated by Mr. Ramachandra, Mr. D. Varun kumar, Mrs. Navodaya.

This educational visit was mainly focused on:

- About the RMC working process in the field.
- Different advantages of RMC.
- The field application of concrete technology laboratory experiments.
- The use of admixtures and batching and mixing process.



- A field visit to **Nilaya Architects Structural Consultant And Construction**”, near L.B nagar on 7<sup>th</sup> april 2022 was organized by civil engineering department. The students of 3<sup>rd</sup> year was taken to the site. the faculty who accompanied the students to the site are Mr. V. Abdul Raffi, Mrs.V. Navaneetha, Mr. Dr. V. V. Praveen kumar and Mr. Sampath kumar.
- The industrial visit was emphasized on the following aspects:
- Different types of foundations.
- Reinforcement details in different components of construction.
- The importance of construction of retaining walls
- The sub soil drainage.



## **FACULTY JOINED NEWLY IN THE DEPARTMENT:**

<b>Faculty Name</b>	<b>Designation</b>	<b>Qualification</b>	<b>Areas Of Interest</b>	<b>Joined In The Month</b>
N. Kranthi Kumar	Assistant Professor	M. Tech, Structural Engineering	Analysis & Design Of Structures And Structural Components.	January 2022
Reena Rana	Assistant Professor	M.. Tech, Irrigation Water Management	Water Resources Engineering	January 2022
G. Vimala	Assistant Professor	M. E. Structural Engineering	Structural Engineering	February 2022
K. Rupa Sri	Assistant Professor	M. Tech Hy. And Water Resources Engineering	Water Resources Engineering, Ground Water Hydrology	March 2022
Dr. K. Sri Lakshmi	Assistant Professor	Ph. D (DST JRF & SRF) Environmental Science And Technology	Impact Of Climate Change On Water Resources, Water Quality, And Environmental Engineering	April 2022

## **EVENTS ORGANIZED BY THE DEPARTMENT**

### ► **BHASWARA:**

A National level Technical and Cultural Fest BHASWARA 2K22 was organized in the Civil engineering Department on April 28, 29 and 30 2022. The faculty coordinators for the overall event was Mrs. K. Keerthi and Mr. D. Varun Kumar. Different events was organized like Project Expo, Paper presentation, Cad – a –thon, Technical quiz and a minute to win games. The students from inside GCET and from other colleges has participated enthusiastically and have showcased their talents. The event on 30<sup>th</sup> April ended with cultural programs.



## EXPERT LECTURE

Department of Civil Engineering conducted an expert lecture on **“ENTREPRENEURSHIP IN CIVIL ENGINEERING”** dated 23/03/2022 for B. Tech (CIVIL III year Students). Mr. Ch. Ravikanth addressed the gathering on the following concepts.

- i. Limitations of mind-Boundary Vs Freedom.
- ii. Creating Opportunities-Peanuts Vs Fruits.
- iii. Teamwork-Systematic Vs Organised.
- iv. Establishment yourself-Employee Vs Leader.

He also addressed the students about the advanced manufacturing techniques are the few other technologies and clearly explained on the detailed foundations.

He has given an Excellent speech on regarding the concreting columns, casting with honeycombing structures, also said regarding safety measures to be taken while constructing and to check and have a proper plan.

Mr.Ch.Ravikanth has covered topics on construction practices in the society.



# *How To Spot and Fix Bitumen Roads & Potholes*

*Before you even think about getting behind the wheel of your car, you need to check the road for potholes. This is especially true if you're around kids or pets. If you've been driving for a while, you'll know when something isn't right with the street. When potholes form on pavements or roads, it usually means the asphalt beneath it has broken down and started to leak into the road. You can also spot potholes by looking out for them during dry season (July to September) or wet season (October to December). In either case, look out for these signs as a sign that more*



***Pothole: When rainwater pipes up into a puddle on the road, it's time to start***

*potholes are on their way:*

*When potholes form on pavements or roads, they usually result from poor maintenance of the asphalt beneath it. You can also spot potholes by looking out for them during dry season (July to September) or wet season (October to December). In either case, look out for these signs as a sign that more potholes are on their way: - When rainwater pipes up into a puddle on the road, it's time to start worrying about potholes. - Cracks the size of a dinner plate: If the asphalt is thin enough for water to seep through, then it means there's more damage down below. - They form deep and wide – if you see this, you know potholes are out there. - You can drive right through them: This is a surefire sign that there's more damage coming. - It gets progressively worse as the wet season approaches: During this period, the roads start to expand and contract at an alarming pace. - Don't be fooled by its small appearance - it could be big trouble - Bottom line*

***Cracks the size of a dinner plate: If the asphalt is thin enough for water to seep through, then it means there's more damage down below.***



***S. Abidur Rahaman  
21R15A0107***



# Concrete: THE FUTURE

## Influential: THE CEMENT

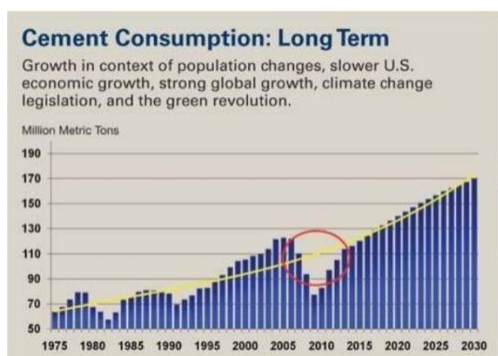
Concrete is the second-most used material on earth. It is also the second-largest emitter of CO<sub>2</sub>, with cement manufacturing accounting for 5 to 7 percent of annual emissions. The continued popularity of concrete as a material of choice in the design and construction industry, coupled with increasing unease of the environmental consequences, has put concrete firmly in the spotlight of innovation and experimentation. As a result, designers, architects, and researchers around the world are generating multiple visions for what the future of concrete in architecture could look like.



Our ‘Concrete Future’ sets out the positive vision for how the cement and concrete industry will play a major role in building the sustainable world of tomorrow. Over the past 100 years, concrete has revolutionized the global built environment. It is the vital building material that has shaped our modern world. As we face the important challenges for future generations, addressing the need for sustainable communities and prosperity, including key infrastructure, homes, clean water and providing resilient communities as our climate changes, as well as supporting the transition to low carbon energy concrete.

### Efficiency in concrete production

In terms of concrete production, industrialization is the key specific lever. Moving from small project site batching of concrete using bagged cement to industrialized processes offers significant CO<sub>2</sub> emissions savings because of the adherence to mix specifications and quality control. In some emerging economies such as India, the vast majority of concrete production is currently on project sites. A transition to industrialized production has been seen in other countries. More broadly utilization of admixtures, improved processing of aggregates are good opportunities for CO<sub>2</sub> emissions savings in concrete production. These savings have already been implemented by parts of the industry, but broader and deeper application will deliver further savings. On average globally, optimization of concrete production in terms of binder utilization can lead to binder demand



reductions of 5% and 14% in 2030 and 2050 respectively.

The concrete industry in particular is one of the major global consumers of natural resources. In order to minimize this impact, experts have considered the manufacture of concrete as a possible destination for construction and demolition waste (CDW) and also as a source for recycled aggregates (RAs) to be used in new concrete life cycles. Aggregates account for some 70%–80% of the total volume of concrete and consequently any reduction in the consumption of natural aggregates would have a significant beneficial impact on the environment. For this reason, the use of recycled CDW as concrete aggregate has been studied in the recent years.



Concrete has been a material of choice for architects and builders for thousands of years, with the earliest known use dating from Syria and Jordan in 6000BC. Its low cost, versatility, fast application, and sheer familiarity to those involved in using it means that roughly 22 billion tons of concrete are poured every year. According to a recent BBC study, production of cement has increased thirtyfold since 1950, and a further fourfold since 1990, driven in part by postwar building in Europe, and building booms across Asia from the 1990s onwards. It is predicted that to keep pace with demands in South East Asia and sub-Saharan Africa, cement production may have to increase by 25% by 2030.

**Concrete is more than a material, it's about Life.**



**DHONTHOJU SAIRAM**

**21R15A0102, Civil-2A**

# THE NEXT PANDEMIC...!!

- Can we build a global pathogen defence system – a planetary equivalent of the immune system – to protect us when the next pandemic arrives?
- What if we could give the planet an immune system just like ours?
- Can we really prevent the “THE NEXT PANDEMIC” by throwing technology at the problem?



Recently the world has been triggered with the outbreak of Corona Virus. The COVID-19 pandemic, which originated in the city of Wuhan, China, has quickly spread to various countries, with many deaths reported. The COVID-19 pandemic has led to a dramatic loss of human life worldwide and presents an unprecedented challenge to public health, food systems and the world of work. The economic and social disruption caused by the pandemic is devastating. Millions of enterprises have faced an existential threat.

Now the virus is constantly changing through mutation and new variants have already started spreading their wings. On the other hand, Microsoft co-founder and Billionaire, philanthropist Mr. Bill gates has already warned about the new pandemic, he also further noted that it would be more likely to be a respiratory virus, which may spread more rapidly, due to vast amount of human travelling that is happening in the world currently. He said that the world needs to spend more on research and development, to boost up the technology which would in return help in improving the healthcare sector and to protect the world from **“THE NEXT PANDEMIC.”**

- **Can we really prevent the next pandemic by throwing technology at the problem?**

Yes, with the advancement in the technology it became an easy task for the scientist to identify the virus in the earlier stages. A silent network of satellites and supercomputers quietly keeping track of anything that could cause the next pandemic. It just like giving an immune system to the planet which would detect and respond if something goes wrong which is not healthy. With the help of AI sensors, biosensing networks, and genomic surveillance we can detect the virus.

- **Tracking disease in sewage**

Sewer sampling caught a silent epidemic of a poliovirus in Israel, triggering a vaccination campaign that helped to avert a more serious outbreak of polio. Now, across Europe and the US, wastewater testing for COVID-19 is helping scientists to get an unbiased picture of how the virus spreads. Italian researchers, retrospectively analysed samples of raw sewage collected before the first wave officially began, detecting traces of the virus in samples from three Italian cities in December and January, weeks before the first non-imported case was reported in late February.



- **Biosensing networks**

Another key component is a biosensing network that it envisions sensors being embedded into plants and animals. The technology uses components that the researchers suggest could be modified to detect different pathogens, perhaps in portable devices in regions where the risk of animal diseases crossing over into humans is high. These would have us rolling out machine-designed vaccines at the touch of a button and even suggests distributing antibodies in drinking water, a step that would seem less drastic if we were talking about something more dangerous than COVID.

- **Genomic observatory**

Genomic surveillance is the process of constantly monitoring pathogens and analysing their genetic similarities and differences. It helps researchers, epidemiologists and public health officials to monitor the evolution of infectious diseases agents, alert on the spread of pathogens, and develop counter measures like vaccines. The COVID-19 pandemic has shown that health systems need genomic surveillance so that risks are rapidly detected and addressed. When an individual undergoes whole genome sequencing, they reveal information about not only their own DNA sequences, but also about probable DNA sequences of their close genetic relatives. Scientists used this to identify SARS - CoV-2 variants.

The human beings of the current era have undergone an experience which the previous generations have not even thought of. So, the Corona virus too is not infinite but proved itself to be very fatal. Of course, we have lost so many lives because of the novel virus. So, the next pandemic should be very much visible because of the machines and human mind that we have. All the odd things that happen teaches a lesson to the persons that experience it. So, are we after having gone through the trauma of this pandemic we have an idea of what it is all about to live with a virus in our body? The amount if researches that have been done, we are sure to believe that the next pandemic which may affect us in the near future won't be as fatal as that of now. So continuous progress in the field of science and Technology are very much required to deal with the upcoming dangers that the viruses can cause to whole humanity, this Tougher Covid-19 has taught the world to detect virus early and take preventive measures to stop

**“THE NEXT PANDEMIC”**



**KALLEM BHAVYASHRI**  
**21R15A0103-CIVIL 2A**