

**NEWSLETTER 2024-2025** 

# DEPARTMENT OF M.TECH. CSE

(5 YEARS INTEGRATED COURSE



2024-25 Volume - 5





### **INSTITUTION VISION & MISSION**

### **Our Vision**

Vision of Erode Sengunthar Engineering College is to become a World Class Technical Institution and Scientific Research Centre for the Benefit of the Society.

### **Our Mission**

Erode Sengunthar Engineering College will strive continuously to

- Create Positive difference to Society through Innovative Teaching –
   Learning Process.
- Impart Value Based Technical Education to the Students from across various Socio Economic backgrounds.
- Build State of art infrastructure for high quality Research and Development capabilities on par with the finest in the Globe and widen student's horizons beyond Class Room.
- Bring out Competent, Ethically Strong and Quality Professionals.

### **NEWSLETTER 2024-2025**

## DEPARTMENT OF M.TECH. CSE

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### **ABOUT THE DEPARTMENT**

M.Tech. in Computer Science and Engineering (CSE) program started during the year 2021 and it is designed to cultivate advanced technical expertise, innovative thinking, and ethical leadership. We provide a dynamic learning environment that equips students with cutting-edge knowledge and research capabilities, preparing them to address complex industry challenges and contribute to technological advancements. Our institution is committed to shaping the future of computer science and engineering by fostering innovation, excellence, and ethical leadership. We provide a dynamic learning environment that empowers students to become industry-ready professionals and responsible global citizens. We strive to be a leading center of excellence in Computer Science and Engineering, equipping students with the knowledge, skills, and ethical values necessary to meet industry and societal challenges. Through innovation and research, we aim to drive sustainable development and technological advancements.

### **VISION**

To emerge as a premier center of excellence in Computer Science and Engineering, fostering innovation, advanced research, and technological leadership to address global challenges and contribute to societal progress..

### **MISSION**

- To impart quality education in Computer Science and Engineering with multidisciplinary approach, integration of theoretical knowledge, practical skills and emerging technologies.
- To cultivate a research-oriented approach, critical thinking and problem-solving abilities through innovation and industry collaborations.
- To inculcate ethical values, leadership qualities and commitment to the lifelong learning, empower the students for professional excellence.
- To advance computing research through interdisciplinary studies, innovative projects and contributions to cutting-edge science.

### **PROGRAM OUTCOMES**

- Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- 9.Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- 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.
- 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.
- 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**

PSO1: Apply the fundamental knowledge for problem solving and analysis as well as conduct investigations in computer science and engineering for sustainable development.

PSO2: Design and develop the solutions for real time problems and implement them by using modern software tools in lieu of deploying them in the society for its growth.

PSO3: Communicate effectively, adopt ethics and engage in life-long learning

## PROGRAM EDUCATIONAL OBJECTIVES

PEO1: Ability to be Successful career in academia or

industries associated with Computer Science and

Engineering.

PEO2: Able to Exhibit analytical, decision making and

problem solving skills for handling real life problems and to create novel products.

PEO3: Ability to communicate the findings or express

innovative ideas in an effective manner with

awareness of professional, social and ethical responsibilities to broader social context.

PEO4: To Possess leadership qualities and emerge in a

range of professions.

# DEPARTMENT OF M.TECH CSE MESSAGE FROM THE HEAD OF DEPARTMENT



Welcome to M.Tech. Computer Science and Engineering!

It is my pleasure to welcome you to the M.Tech. in Computer Science and Engineering (CSE) program, where innovation meets excellence. In today's fast-evolving technological landscape, computer science plays a pivotal role in shaping industries, research and society. Our program is designed to equip students with the advanced technical knowledge, research capabilities and leadership skills required to thrive in this dynamic field.

At our institution, we emphasize cutting-edge technology, interdisciplinary learning and industry collaboration ensuring that students gain both practical expertise and academic excellence. With a strong commitment to fostering innovation, ethical practices and sustainability, we prepare graduates to contribute meaningfully to global advancements in computing.

Whether you aspire to drive groundbreaking research, lead industry transformations, or develop solutions for real-world challenges, this program will empower you with the tools and confidence to succeed.

I invite you to embark on this exciting journey with us and explore the endless possibilities that the field of computer science has to offer.

Best regards
Dr.S.Umarani
Professor
Head of Department
M.Tech. Computer Science and Engineering

### **ACADEMIC ACTIVITIES**

### EMPOWERING YOUR DAILY WORK: PRACTICAL PROMPT ENGINEERING

MR. P. DINESH KUMAR, PRODUCT MANAGER - KISSFLOW, CHENNAI

### BUSINESS INTELLIGENCE WITH POWER BI: A HANDS-ON TRAINING EXPERIENCE

MR. T. RAJAN, ASSISTANT PROFESSOR - PRESIDENCY UNIVERSITY, BANGALORE

### **MULTI-MODAL DATA FUSION FOR COMPREHENSIVE ANALYSIS**

MR. P. BOOPATH, CHIEF TECHNICAL EXECUTIVE – MONZHA RESEARCH LABS, COCHIN



### LOGIC BUILDING IN JAVA PROGRAMMING

MR. NANDHAGOPAL, ASSISTANT PROFESSOR (SR.G) – KPR IET, COIMBATORE

## HANDS-ON BIG DATA ANALYTICS: TOOLS, TECHNIQUES, AND INSIGHTS

MR. SABRINATHAN MUTHU, FOUNDER & CEO – GATEWAY SOFTWARE SOLUTIONS, COIMBATORE





# FACULTY PARTICIPATION

Dr.S.Umarani, Associate Professor, Department of M.Tech-Computer Science and Engineering has participated in STTP on "Embedded System IoT and Security" organized by IETE students forum Sri Venkateshwara College of Engineering, Sriperumpudur from 10.06.2024 to 14.06.2024.

Mr.S.MohanKumar, Assistant Professor of M.Tech-Computer Science and Engineering has attended sis days faculty development programme on "Big data Analytics" organized by National Engineering college, Kovilpatti from 22.06.2024 to 27.06.2024.

Dr.S.Umarani, Associate Professor, Department of M.Tech-Computer Science and Engineering has participated and completed NEP 2020 Orientation & Sensitization Programme under Malaviya Mission Teacher Training Programme (MM-TTP) of University Grants Commission (UGC), organized by UGC-Malaviya Mission Teacher Training Centre (UGC-MMTTC), Bharathidasan University, Tiruchirappalli, Tamil Nadu from 01.07.2024 to 10.07.2024 and obtained the Grade 'A'.





Mrs.S.M.Karpagavalli, Assistant Professor of M.Tech-Computer Science and Engineering has attended one day webinar on "Quantum Horizons:Revolutionizing healthcare with Quantum Computing" organized by School of computer science and engineering School of information science in association with IEEE student chapter, on 17.07.2024.

Mrs.S.M Karpagavalli, Assistant Professor of M.Tech-Computer Science and Engineering has attended a Faculty development programme on "Generative Al and Applications of Machine learning" organized by Haldia institute of technology, West Bengal from 23.07.2024 to 27.07.2024.

Mr.K.A.Dhamotharan, Associate Professor, Department of M.Tech- Computer Science and Engineering has participated and Completed the NEP 2020 Orientation & Sensitization Programme under Malaviya Mission Teacher Training Programme (MM-TTP) of University Grants Commission (UGC), organized by UGC-Malaviya Mission Teacher Training Centre (UGC-MMTTC), Bharathidasan University, Tiruchirappalli, Tamil Nadu, India, during 05.08.2024 to 14.08.2024, and obtained the Grade 'A'.

Mr.A.Rajesh, Associate Professor, Department of M.Tech- Computer Science and Engineering has participated and Completed the NEP 2020 Orientation & Sensitization Programme under Malaviya Mission Teacher Training Programme (MM-TTP) of University Grants Commission (UGC), organized by UGC-Malaviya Mission Teacher Training Centre (UGC-MMTTC), Bharathidasan University, Tiruchirappalli, Tamil Nadu, India, during 05.08.2024 to 14.08.2024, and obtained the Grade 'A'.

Mrs.S.M Karpagavalli, Assistant Professor of M.Tech-Computer Science and Engineering has attended a Faculty development programme on "Machine learning and deep learning recent trends and appreciations" organized by Government college of technology, Coimbatore from 19.08.2024 to 23.08.2024.

Ms. N.R.Raghapriya, Assistant Professor, Department of M.Tech – Computer Science and Engineering has attended ATAL Sponsored – One Week Faculty Development Program on "Immersive Virtual Reality" organized by School of Engineering, Dayananda Sagar University, Bangaluru, Karnataka, India, during 26.08.2024 and 31.08.2024.

Mr.K.A.Dhamotharan, Associate Professor, Department of M.Tech- Computer Science and Engineering has participated and completed AICTE Training and Learning (ATAL) Academy Faculty Development Program on "Design of Internet of Things (IoT) Solutions for Sustainable Environment" at Dr. N.G.P Arts and Science College Coimbatore, Tamilnadu, India, during 02.09.2024 to 07.09.2024.

Mr.A.Rajesh, Associate Professor, Department of M.Tech- Computer Science and Engineering has participated and completed AICTE Training and Learning (ATAL) Academy Faculty Development Program on "Design of Internet of Things (IoT) Solutions for Sustainable Environment" at Dr. N.G.P Arts and Science College Coimbatore, Tamilnadu, India, during 02.09.2024 to 07.09.2024.

Mrs.S.M.Karpagavalli, Assistant Professor of M.Tech-Computer Science and Engineering has attended two days National level seminar on "Quantum Computing and National Security:Implications for Defense Systems" organized by Kongu engineering College, Perundurai from 14.10.2024 to 15.10.2024



- Ms.N.R.Raghapriya, Assistant Professor of M.Tech Computer and Science Engineering has presented a paper on the topic "FPGA Implementation of XOR- MIX based full adder and Truncated Multiple for Signal Processing Applications", in 15<sup>th</sup> IEEE International Conference on "International Conference on Computing Communication and Networking Technologies (ICCCNT 2024)Organized by IIT - Mandi, Kamand, India, from 24.06.2024 to 28.06.2024.
- Mr.A.Rajesh, Associate Professor of M.Tech-Computer Science and Engineering has
  presented a paper on "Optimizing Electricity Theft Detection Using Neural Turing
  Machines and Machine Learning" in the International Conference on Software, Systems
  and Information Technology(SSITCON-2024) organized by the Department of
  Information and Science Engineering, Sri Siddhartha Institute of Technology, Tumakuru
  from 18.10.2024 to 19.11.2024.
- Mrs. S.M. Karpagavalli, Assistant Professor of M.Tech-Computer Science and Engineering has published a book entitled Beginning Microsoft power BI Book Clever Fox Publishing ISBN NO 978-93-5648-571-6 in the year 2024.(19.07.2024).
- Ms. N.R.Raghapriya, Assistant Professor of M.Tech Computer Science and Engineering has published a patent on "Machine learning Driven wearable sensor for Monitoring and classification of health issues in Personalization Health care" on 20.05.2022 Application No: 202441069620 A, The Patent Office Journal No.38/2024 Dated 20.09.2024.
- Mr.K.A.Dhamotharan, Associate Professor of M.Tech Computer Science and Engineering, published a patent on "A Machine Learning Approach For Predicting Entrepreneurial Success In Higher Education," Application No. 202441068871 A, Patent Office Journal No. 38/2024, Dated 20.09.2024.
- Mr.K.A.Dhamotharan, Associate Professor of M.Tech Computer Science and Engineering, published a patent on "Improving Student Performance with IoT-Enhanced Learning Environments: A Machine Learning Perspective," Application No. 202441068879 A, Patent Office Journal No. 38/2024, Dated 20.09.2024.
- Mr.A.Rajesh, Associate Professor of M.Tech Computer Science and Engineering, published a patent on "A Machine Learning Approach For Predicting Entrepreneurial Success In Higher Education," Application No. 202441068871 A, Patent Office Journal No. 38/2024, Dated 20.09.2024.
- Mr.A.Rajesh, Associate Professor of M.Tech Computer Science and Engineering, published a patent on "Improving Student Performance with IoT-Enhanced Learning Environments: A Machine Learning Perspective," Application No. 202441068879 A, Patent Office Journal No. 38/2024, Dated 20.09.2024.
- Mrs.S.M.Karpagavalli, Assistant Professor of Computer Science and Engineering has published a patent on "A convolution neural network approach in colonoscopy using Artificial intelligence" on 20.09.2024 Application No.202221015150.
- Ms. N.R.Raghapriya, Assistant Professor of M.Tech Computer Science and Engineering has published a patent on "IOT Based Automatic Robotic Waste Bin" on 20.05.2024 Application No: 433108-001, Dated 07.10.2024.
- Dr.S.Umarani , Associate Professor of M.Tech-Computer Science and Engineering has published an utility patent on "Automatic juice Vending Machine for Motherhood and Illness People", on 11.10.2024 Application Number: 202341025986.
- Mrs.S.M.Karpagavalli, Assistant Professor of M.Tech-Computer Science and Engineering
  has published a patent on "loT -driven soil monitoring and crop management with
  machine learning for fertilizer recommendations" on 08.11.2024 Application No.
  202421072652.



### **FUNDS RECEIVED**

Dr.S.Umarani, Associate Professor of M.Tech-Computer Science and Engineering received grant of Rs. Rs. 2,31,428 on 01.07.2024 and Rs.2,26,701 on 18.08.2024 as consultancy from PMKVY - Skill Indiadigital -In collaboration with PKR arts and science college for 240 students.

Mr.K.A.Dhamotharan, Associate Professor and Mr.A.Rajesh, Associate Professor of M.Tech-Computer Science and **Engineering** have received grant of Rs.1,00,000 online for faculty an development programme "High on performance computing for Scientific Research and Simulation" from the AICTE Training and Learning(ATAL) Academy. The duration of FDP is from 16.12.2024 to 21.12.2024

## STUDENT ACHIEVEMENTS

Yukeshwaran N., Third Year, M.Tech - CSE, vulnerability, recognized under the NASA

received appreciation from NASA for detecting a Vulnerability Disclosure Policy (VDP) on 7th October 2024.

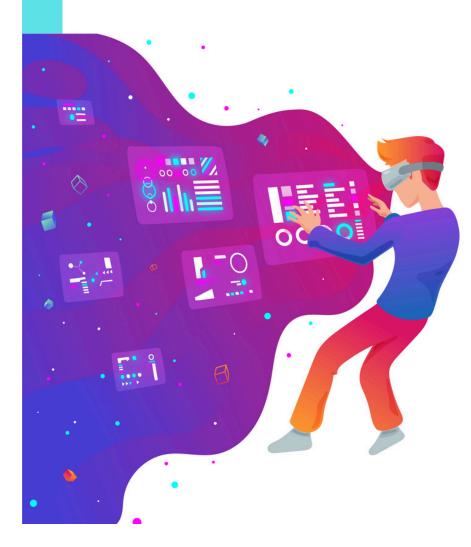




Logeshwaran S. & Santhakumar S., Third Year, M.Tech - CSE, were runners-up in the Chief Minister Trophy 2024-Hockey Tournament, organized so Kongu Vellalar Polytechnic College, Erode, on 18th September 2024, and received a cash prize of Rs. 72,000/-.



# Hackathons & Ideathons



### 10.09.2024

Selvan Sasidharan N, Selvan Sasi Ganeshan S (III M.Tech CSE) participated in a Hackathon at PPG Institute of Technology, Coimbatore.

### 27.09.2024

Selvan S. Dharaneswaran, Selvan N. Yukeshwaran, Selvan D. Maheshwaran, Selvan A. Mugunthan (III M.Tech CSE) participated in the Tech-Trek 8-Hour Non-Stop Hackathon at PPG Institute of Technology.

### 18.10.2024

Selven R. Suraj, Selven Mahendran, Selven Satheesh Kumar (II M.Tech CSE) participated in a Hackathon on "Travel & Tourism" at Coimbatore Institute of Technology, Coimbatore.

### 25.10.2024

Selvan Vikram P, Selvan Bharanidharan C, Selvan Praveenraj G, Selvan Dhilipkumar S, Selvan Immanuel S (IV M.Tech CSE) and Selvan Akilan P.R (III M.Tech CSE) participated in an Ideathon at KPR Institute of Technology, Coimbatore.

## Paper & Project Presentations

### 25.09.2024

Selvi R. Mangaiyakarasi, Selvi S. Keerthana (III M.Tech CSE) presented a paper on "Neural Fuzzy Logic Networks" at the 16th National Level Technical Symposium organized by Hindusthan Institute of Technology, Coimbatore.

### 22.10.2024

Selvan R. Kishore, Selvan U.R. Kabilan (III M.Tech CSE) and S. Muguthan, Selvan D. Ragavan (II M.Tech CSE) presented the project "Electric Skate Scooter" at the 18th National Level Technical Symposium ELIXIR 2024 organized by Government College of Engineering, Erode.



# Symposium Participation

05.11.2024

Selvan S. Santhakumar, Selvan S. Vasudevan (III M.Tech CSE) participated in a Symposium organized by Erode Sengunthar Engineering College.

## Workshops & Seminars

#### 06.09.2024

Selvi R. Dhivya, Selvi T. Nivetha, Selvi B. Poorna Sri, Selvi R. Rajalakshmi (II M.Tech CSE) participated in the SEBR Sponsored Two-Day National Workshop on "Industry Safety Training on AR & VR" at Erode Sengunthar Engineering College, Erode.

### 21.08.2024

Selvi D. Jayashree, Selvi B. Menaka, Selvi E. Mohana, Selvi R. Dhivya, Selvi T. Nivetha, Selvi B. Poornashri, Selvi R. Rajalakshmi (II M.Tech CSE) attended the Workshop on "Gen Al" at Hindusthan Institute of Technology, Coimbatore.

#### 11.09.2024

Selvan Akilan P.R (III M.Tech CSE) attended both a Workshop and a Hackathon at Jeppiar Institute of Technology, Chennai.

### 20.09.2024

Selvan Vikram P, Selvan Krishnan G, Selvan Immanuel S, Selvi Kanchana S, Selvi Vinitha K, Selvi Mohana Priya S, Selvan Srimariyappan S, Selvan Sanjai K, Selvan Dhilipkumar S (IV M.Tech CSE) attended the Workshop on "Science and Technology Capacity Building for Industrial Needs" at Velalar College of Engineering and Technology, Erode.

#### 25.09.2024 - 27.09.2024

Selvan Logeshwaran, Selvan Praveenraj G, Selvan Bharanidharan C, Selvan Sujithkumar K, Selvan Gughan S, Selvan Naharajan M, Selvan Arunprasath B, Selvan Gokul Krishnan B, Selvi Yuvaprabha V, Selvi Nivetha M, Selvi Kalpana G (IV M.Tech CSE) attended the Workshop on "Science and Technology Capacity Building for Industrial Needs" at Velalar College of Engineering and Technology, Erode.

### 17.10.2024 - 18.10.2024

Selvan K. Aravinth Kumar, Selvan E. Arjun, Selvan E. Balakumar, Selvan R. Prithiviraj, Selvan Anadhan, Selvan Kavin Kumar (II M.Tech CSE) participated in the SEBR Sponsored National Workshop on "Predictions of Quantum Computing and Extended Reality (XR) in Automotive Industry" at Erode Sengunthar Engineering College, Erode.

# Student Mini Project Highlights

Our students showcased creativity and innovation with 16 unique mini projects guided by faculty mentors.

WOMEN SAFETY SYSTEM USING IOT - A SMART SOLUTION FOR WOMEN'S SECURITY.

FACE DETECTION DOOR LOCK - ENHANCING HOME SECURITY WITH AI.

SMART WASTE DISPOSAL - IOT-ENABLED WASTE MANAGEMENT SYSTEM.

SECURE QR-BASED LIFE SAVING SYSTEM - EMERGENCY RESPONSE SYSTEM.

LAPTOP CONTROL VOICE ASSISTANT - VOICE-BASED SYSTEM CONTROL.

AI FACE DETECTOR & SAFETY MANAGEMENT - REAL-TIME MONITORING FOR SAFETY.

AUTOMATIC FIRE EMERGENCY TRANSMITTER - IOT-BASED FIRE ALERT SOLUTION.

SMART HOME AUTOMATION - INTELLIGENT HOME DEVICE CONTROL.

ENVIRONMENTAL & AIR POLLUTION MONITORING SYSTEMS - SUSTAINABLE ENVIRONMENT TRACKING.

PLANT AQUAGUARD (SMART WATERING SOLUTION) - AUTOMATED PLANT IRRIGATION.

SEWAGE BLOCK DETECTION - EARLY DETECTION OF DRAINAGE ISSUES.

SMART CRADLE FOR BABY MONITORING - IOT SYSTEM FOR INFANT SAFETY.

SOCIAL MEDIA SENTIMENT ANALYSIS - AI-DRIVEN OPINION MINING.

RECIPE GENERATOR - INTELLIGENT FOOD SUGGESTION SYSTEM.

BLOOD GROUP DETECTION USING DEEP LEARNING - AI-POWERED MEDICAL IMAGING TOOL.

These projects reflect the practical skills, innovation, and teamwork of our M. Tech & students, addressing real-world problems with ToT, AT, and Deep Learning technologies.

## ALUMNI ASSOCIATION



MS. R.VIGNESWARI,TECHNOLOGY LEAD, INFOSYS LIMITED,COIMBATORE, SHARED HER EXPERIENCE ABOUT THE DEVELOPING AN IT STRATEGY AND ROADMAP TOWARDS SUCCESS ON 23.10.2024.

## **Social Extension Activity**





DEPARTMENT OF M.TECH – COMPUTER SCIENCE AND ENGINEERING ORGANIZED THE SOCIAL EXTENSION ACTIVITY WITH 40 STUDENTS ALONG WITH ONE FACULTY. VISITED THE OLD AGE HOME "UNIVERSAL PEACE FOUNDATION OLDAGE HOME", SATHYAMANGALAM, ERODE ON 17.08.2024 AND CONDUCT THE GAMES, PROVIDE THE NECESSARY MATERIALS FOR ONE MONTH.





DEPARTMENT OF M.TECH – COMPUTER SCIENCE AND ENGINEERING ORGANIZED THE SOCIAL EXTENSION ACTIVITY WITH 53 STUDENTS ALONG WITH ONE FACULTY WE VISIT THE ORPHANAGE "ERODE ARIMA SOCIETY TRUST", THINDAL, ERODE ON. 30.08.2024. WE CONDUCT THE GAMES AND PROVIDE THE PROVISION FOR ONE MONTH.



Department of M.Tech - Computer Science and Engineering organized the social extension activity with 60 students along with two faculty. Visit the Orphanage "Helping Hearts Home", Tirupur on 13.09.2024 and conduct the games, provide the necessary materials for one month.



Department of M.Tech - Computer Science and Engineering organized the social extension activity with 60 students along with two faculty. Conducted the Awareness program and Planting trees in "Government Higher Secondary School",15 vellampalayam, Trippur on. 13.09.2024 also conduct the games and provide the necessary materials for one month.