About the College

Seshadri Rao Gudlavalleru Engineering College (SRGEC) was established in the year 1998 and is promoted by AANM & VVRSR Educational Society. SRGEC is an Autonomous Institution with permanent affiliation to JNTUK, Kakinada. The college is accredited by NAAC with "A+" grade with 3.46 CGPA. The UG B.Tech programs in CE, EEE, ME, ECE, CSE & IT have been accredited by National Board of Accreditation (NBA), New Delhi under Tier-I. Departments of CE, EEE, ME, ECE & CSE were recognized as Research Centre of JNTUK from the academic year 2014-15. College is offering UG – B.Tech Programs in CE, EEE, ME, ECE, CSE, IT, CSE (AI&ML), AI&DS and IoT, PG – M.Tech Programs with specializations of SE, PEED, MD, VLSID&ES, CSE (AI&ML) and PG – MBA Program with an total intake of 1590.

About the Department

The Department of Mechanical Engineering was established in 1998 and is offering B.Tech course in Mechanical Engineering and M.Tech in Machine Design. The department has qualified and experienced staff and well equipped laboratories with the state-of-the-art facilities. Received Rs. 9 Lakshs from AICTE under RPS Scheme, Rs. 11.3 Lakhs from UGC under Minor Research Project Scheme, 33.75 Lakhs from AICTE under MODROBS and Rs. 11.25 Lakhs sanctioned for FDPs.

About ATAL Academy

The vision of the ATAL academy is to empower the faculty to achieve goals of higher education such as access, equity, quality. The academy supports technical institutions in fostering research, innovation, and entrepreneurship through training. ATAL academy provides a variety of opportunities for training and exchange of experiences such as workshops, orientations, learning communities, peer monitoring and other faculty development programs. ATAL academy stresses empowering technical teachers, technicians using information and communication technology.

About the Course

This specialized course focuses on advancing knowledge in rare earth & advanced materials used in modern electronic devices and sustainable energy systems. The course covers the properties, synthesis, and applications of rare earth elements, nano-materials, semiconductors, and smart materials. It highlights their role in technologies such as solar cells, batteries, fuel cells, and electric vehicles. The program also emphasizes sustainability, recycling, and green energy solutions. Through expert lectures and practical insights, participants gain updated knowledge, research exposure, and innovative teaching strategies to bridge the gap between academic concepts and real-world technological applications.

Course Objective

- To understand rare earth materials and their properties for modern applications.
- To learn synthesis and characterization methods for advanced functional materials.
- To explore applications in electronic devices and green energy systems.
- To promote sustainable materials, recycling methods, and eco-friendly technologies.
- To enhance research skills, innovation, and industry-relevant teaching methodologies.

Course Outcomes

- Explain properties and applications of rare earth and functional materials.
- Apply synthesis and characterization techniques for advanced material development.
- Analyze materials used in electronic devices and green energy systems.
- Evaluate sustainability, recycling methods, and environmental impact of materials.
- Enhance research, innovation, and effective teaching skills in material science.

AICTE Training and Learning (ATAL) Academy

Sponsored

Two Weeks Offline Advanced Faculty Development Program on

Rare Earth Materials & New-Generation Functional Materials for Electronics Devices and Green Energy Systems

16 - 28 November 2026

Organized by

Department of Mechanical Engineering

Seshadri Rao Gudlavalleru Engineering College

(An Autonomous Institute with Permanent Affiliation to JNTUK, Kakinada)

Seshadri Rao Knowledge Village,
Gudlavalleru, Krishna Dist.
Andhra Pradesh -521 356



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Sri Musunuri Srinivasa Rao,
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Sri Satyanarayana Rao Vallurupalli,
Secretary & Correspondent

Sri Rama Krishna Vallurupalli,
Co-Secretary & Correspondent

Patron

Dr. B. Karuna Kumar, *Principal*

Co-Patrons

Dr. P. Kodanda Rama Rao,
Vice Principal - Administration

Dr. M.R.Ch. Sastry,
Vice Principal - Academics

Advisors

Dr. P. Siddhaiah, *Director*

Dr. P. Ravindra Babu, *Advisor to the Management.*

Dr. G.V.S.N.R.V.Prasad, *Director (PG C&T R&D)*

Dr. M. Kamaraju, *Director (AS&A)*

Address for Correspondence

Coordinator:

Dr. **K.Ch. Kishor Kumar,** *Professor & Head*
Experience: *26 Years*
Mobile: +91 9440576157
E-mail: kchkishorekumar2k@gmail.com

Co-Coordinator:

Dr. **G.V. Jagadeesh,** *Assistant Professor*
Experience: *7 Years*
Mobile: +91 9566761147
E-mail: gvenkatajagadeesh@gmail.com

Eligibility

Professors/ Associate Professors/ Assistant Professors/ Research Scholars from AICTE approved institutions.

Participation Fee

No Charge for Registration and Certification.

Organising Committee

Dr. **A. Jawahar Babu**, *Prof.*
Dr. **K. Syam Sundar**, *Prof. & CoE*
Sri **D. Kiran Prasad**, *Assoc. Prof.*
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Mr. **B. Naga Raju**, *Asst. Prof.*
Mr. **M.D.V. Vara Prasad**, *Asst. Prof.*
Mr. **G. Moshe Babu**, *Asst. Prof.*
Mr. **M. Karamchand**, *Asst. Prof.*

Coordination Committee

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Dr. **A. Amarendra,** *Professor & HoD, EEE*
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Dr. **S. Suresh,** *Assoc. Prof & HoD, BS&H*
Dr. **G. Raja Kumar,** *Assoc. Prof & HoD, English*

Registration Link
https://atalacademy.aicte-india.org/

Resource Persons

Industry Experts

1. Mr. **D. Ramakrishna,** *CEO, Efftronics Systems Pvt. Ltd., Vijayawada*
2. Dr. **A.V.R. Reddy,** *CEO, Gemmological Institute of India, Mumbai*
3. Dr. **Phani Kumar Mallisetty,** *Scientist-F, CSIR-Central Mechanical Engineering Research Institute, Durgapur, West Bengal*
4. Mr. **M.V. Rama Krishna,** *DGM, Product Planning, Tata Motors Commercial Vehicles Pune, Maharastra*
5. Mr. **T.P. Sameer Kumar,** *Senior Manager , Steel Authority of India Limited, Jharkhand*
6. Mr. **Asanada Srikanth,** *Assistant Manager , Steel Authority of India Limited, Jharkhand*
7. Mr. **Rohit Kolluju,** *Assistant Engineer, Telangana Power Generation Corporation Limited, Hyderabad*
8. Dr. **Varun Raj Kaniganti,** *Senior Resident, AIIMS, Mangalagiri*

Academic Experts

1. Dr. **M. Ravi Shankar,** *Professor, Indian Institute of Technology Tirupati*
2. Dr. **Ch. Viswanath,** *Professor, Indian Institute of Technology Hyderabad*
3. Dr. **D. Harnadh,** *Professor, National Institute of Technology Warangal*
4. Dr. **R. Arun Kumar,** *Associate Professor, National Institute of Technology Warangal*
5. Dr. **Palash Mishra,** *Assistant Professor, National Institute of Technology Warangal*
6. Dr. **S. Uma Maheswara Rao,** *Assistant Professor, National Institute of Technology Warangal*
7. Dr. **M. Hymavathi,** *Assistant Professor, National Institute of Technology Andhra Pradesh*
8. Dr. **B. Karuna Kumar,** *Professor & Principal, Seshadri Rao Gudlavalleru Engineering College, Gudlavalleru*

SCHEDULE OF ATAL OFFLINE ADVANCED FDP

FDP Application Number : 1775637074
Title of the FDP : Rare earth materials & new-generation functional materials for electronic devices and green energy systems
FDP Start Date : 16th November 2026 **FDP End Date : 28th November 2026**

Offline (1st Week)

Day - 1	Day - 2	Day - 3	Day - 4	Day - 5	Day - 6
9.00 – 9.30 Inauguration					
9.30 – 12.00 **Session - 1** **Name of the Expert:** Dr. M. Ravi Shankar **Designation:** Professor **Organization:** Indian Institute of Technology Tirupati **Experience in Years:** 22 years **Topic to be taught:** Sustainable Additive Manufacturing using Polymer-Metal Binding Filament Materials	**9.30 – 12.00** **Session - 3** **Name of the Expert:** Dr. Phani Kumar Mallisetty **Designation:** Scientist - F **Organization:** CSIR-Central Mechanical Engineering Research Institute **Experience in Years:** 17 years **Topic to be taught:** Hydrogen Energy Storage with new generation functional materials	**9.30 – 12.00** **Session - 5** **Name of the Expert:** Dr. A.V.R. Reddy **Designation:** CEO **Organization:** Gemmological Institute of India, Mumbai **Experience in Years:** 49 years **Topic to be taught:** Spectrometric Techniques for testing and characterization of Gems and diamonds	**9.30 – 12.00** **Session - 7** **Name of the Expert:** Dr. Varun Raj Kaniganti **Designation:** Senior Resident **Organization:** AIIMS Mangalagiri **Experience in Years:** 4 years **Topic to be taught:** Drug Use Prevention and Early Intervention in Higher Education Institutions – A Concise Guide for Faculty Members	**9.00 – 12.00** **Session - 9** **Name of the Expert:** Mr. D. Rama Krishna **Designation:** Managing Director **Organization:** Efftronics Systems Pvt. Ltd. Vijayawada **Experience in Years:** 35 years **Topic to be taught:** A paradigm shift in Electronic industry by Rare earth materials	**9.30 – 12.00** **Session - 12** **Name of the Expert:** Mr. T.P. Sameer Kumar **Designation:** Senior Manager **Organization:** Steel Authority of India Ltd. Jharkhand **Experience in Years:** 17 years **Topic to be taught:** Advanced Beneficiation Techniques of Rare-earth Materials and their Techno Economics
12.00 – 1.00 **Article Discussion** **Title of the Research Paper:** Accurate identification of rare earth mining area from low-resolution remote sensing images: a cloud-based approach integrating super-resolution and semantic segmentation **Name of the journal:** International Journal of Applied Earth Observation and Geoinformation **Year of Publication:** 2026	**12.00 – 1.00** **Article Discussion** **Title of the Research Paper:** Tracing rare earth elements distribution and enrichment mechanism in phosphorites of the Paleoproterozoic Bijawar Group in Mardeora Mine, Chattarpur district, Madhya Pradesh (M.P.), India **Name of the journal:** Journal of Asian Earth Sciences: X **Year of Publication:** 2026	**12.00 – 1.00** **Article Discussion** **Title of the Research Paper:** Advances in rare earth mineral extraction from waste for energy storage applications: A comprehensive review **Name of the journal:** Process Safety and Environmental Protection **Year of Publication:** 2026	**12.00 – 1.00** **Article Discussion** **Title of the Research Paper:** Rare-earth engineering of NaAlO3perovskites unlocks unified optoelectronic, thermoelectric, and spintronic functionalities **Name of the journal:** Physica B: Condensed Matter **Year of Publication:** 2025		**12.00 – 1.00** **Article Summary**
1.00 - 1.30 **Lunch**	**1.00 - 1.30** **Lunch**	**1.00 - 1.30** **Lunch**	**1.00 - 1.30** **Lunch**	**12.00 - 12.30** **Lunch**	**1.00 - 1.30** **Lunch**

Cont… **Offline (1st Week)**

Day - 1	Day - 2	Day - 3	Day - 4	Day - 5	Day - 6
1.30 – 4.00 **Session - 2** **Name of the Expert:** Mr. Rohit Kolluju **Designation:** Assistant Engineer **Organization:** Telangana Power Generation Corporation Limited, Hyderabad **Experience in Years:** 15 years **Topic to be taught:** Mapping of Rare earth materials from waste dump using AI technologies	**1.30 – 4.00** **Session - 4** **Name of the Expert:** Dr. Palash Mishra **Designation:** Assistant Professor **Organization:** National Institute of Technology Warangal **Experience in Years:** 13 years **Topic to be taught:** Development of flame-retardant rare-earth-doped polymeric composites for Electrical Insulation Applications	**1.30 – 4.00** **Session - 6** **Name of the Expert:** Dr. D. Harnadh **Designation:** Professor **Organization:** National Institute of Technology Warangal **Experience in Years:** 25 years **Topic to be taught:** Rare-earth Luminescent Materials & Devices for Better Future	**1.30 – 4.00** **Session - 8** **Name of the Expert:** Dr. B. Karuna Kumar **Designation:** Professor & Principal **Organization:** Seshadri Rao Gudlavalleru Engineering College **Experience in Years:** 44 years **Topic to be taught:** Implementation of NEP-2020 in academia	**12.30 – 3.00** **Session - 10** **Name of the Expert:** Dr. R. Arun Kumar **Designation:** Professor **Organization:** National Institute of Technology Warangal **Experience in Years:** 25 years **Topic to be taught:** New Generation Optical Materials blended with Rare Earth Elements	**1.30 – 4.00** **Session - 13** **Name of the Expert:** Mr. Asanada Srikanth **Designation:** Assistant Manager **Organization:** Steel Authority of India Ltd. Jharkhand **Experience in Years:** 16 years **Topic to be taught:** Exploration, mapping and sustainable extraction of Rare Earth Elements (REE) using Remote Sensing, GIS and Mining Automation
4.00 – 5.00 **Article Discussion** **Title of the Research Paper:** Advances, optical and electronic applications of functional materials based on rare earth sulfide semiconductors **Name of the journal:** Materials & Design **Year of Publication:** 2024	**4.00 – 5.00** **Article Discussion** **Title of the Research Paper:** A review on transition metal oxide nanoparticles and rare earth oxide doped borate and tellurite glasses: From structural, optical, and photoluminescence properties to next generation optical technology **Name of the journal:** Journal of Alloys and Compounds **Year of Publication:** 2026	**4.00 – 5.00** **Article Discussion** **Title of the Research Paper:** Rare earth permanent magnets for the green energy transition: Bottlenecks, current developments and cleaner production solutions **Name of the journal:** Resources, Conservation & Recycling **Year of Publication:** 2025	**4.00 – 5.00** **Article Discussion** **Title of the Research Paper:** The recent progress of ion exchange for the separation of rare earths from secondary resources – A review **Name of the journal:** Hydrometallurgy **Year of Publication:** 2023	**3.00 – 5.30** **Session - 11** **Name of the Expert:** Dr. Ch. Viswanath **Designation:** Professor **Organization:** Indian Institute of Technology Hyderabad **Experience in Years:** 17 years **Topic to be taught:** Multi-scale Material Modelling Techniques for Rear-earth Material	**4.00 – 5.00** **Article Summary**

Offline (2nd Week)

<table>
<tr><th>Day - 7</th><th>Day - 8</th><th>Day - 9</th><th>Day - 10</th><th>Day - 11</th><th>Day - 12</th></tr>
<tr>
<td>9.00 – 12.30
Session - 14
Name of the Expert:
Dr. S. Uma Maheswara Rao
Designation:
Assistant Professor
Organization:
National Institute of Technology Warangal
Experience in Years:
15 years
Topic to be taught:
Rare Earth Materials in Electronic and permanent magnet applications</td>
<td rowspan="3">9.30 – 5.00
Industry based problem solving
Name of the organization:
Efftronics Systems Private Limited, Vijayawada.
Complete address with pincode:
Brundavan Colony, Labbipet, Vijayawada - 520010, Andhra Pradesh, India
Industry Type:
Electronic Industry
Area of specification:
Battery Health Monitoring, Smart Signaling, IoT Solution and Permanent Magnets for Green Energy Systems.</td>
<td rowspan="3">9.30 – 5.00
Industry based problem solving
Name of the organization:
Efftronics Systems Private Limited, Vijayawada.
Complete address with pincode:
Brundavan Colony, Labbipet, Vijayawada - 520010, Andhra Pradesh, India
Industry Type:
Electronic Industry
Area of specification:
Battery Health Monitoring, Smart Signaling, IoT Solution and Permanent Magnets for Green Energy Systems.</td>
<td rowspan="3">9.30 – 5.00
Industry based problem solving
Name of the organization:
Efftronics Systems Private Limited, Vijayawada.
Complete address with pincode:
Brundavan Colony, Labbipet, Vijayawada - 520010, Andhra Pradesh, India
Industry Type:
Electronic Industry
Area of specification:
Battery Health Monitoring, Smart Signaling, IoT Solution and Permanent Magnets for Green Energy Systems.</td>
<td rowspan="3">9.30 – 5.00
Industry based problem solving
Name of the organization:
Efftronics Systems Private Limited, Vijayawada.
Complete address with pincode:
Brundavan Colony, Labbipet, Vijayawada - 520010, Andhra Pradesh, India
Industry Type:
Electronic Industry
Area of specification:
Battery Health Monitoring, Smart Signaling, IoT Solution and Permanent Magnets for Green Energy Systems.</td>
<td>9.30 – 1.30
Team wise presentation of the output</td>
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<tr>
<td>12.30 – 1.00
Lunch</td>
<td>1.30 – 2.00
Lunch</td>
</tr>
<tr>
<td>1.00 – 3.30
Session - 15
Name of the Expert:
Dr. Hymavathi Madivada
Designation:
Assistant Professor
Organization:
National Institute of Technology, Andhra Pradesh
Experience in Years:
14 years
Topic to be taught:
Functionally Graded Materials in Additive Manufacturing: From Concept to Industrial Applications</td>
<td>2.00 – 3.00
Reflection journal</td>
</tr>
<tr>
<td>3.30 – 6.00
Session - 16
Name of the Expert:
Mr. M V Rama Krishna
Designation:
DGM, Product Planning
Organization:
Tata Motors Commercial Vehicles
Experience in Years:
21 years
Topic to be taught:
Cost effective EV Technologies for Indian Commercial Vehicle Market</td>
<td>3.00 – 4.00
Feedback</td>
<td>4.00 – 5.00
Valedictory Session</td>
</tr>
</table>