

# WELCOME TO NAAC PEER TEAM



Department of Physics  
Andhra University  
Visakhapatnam

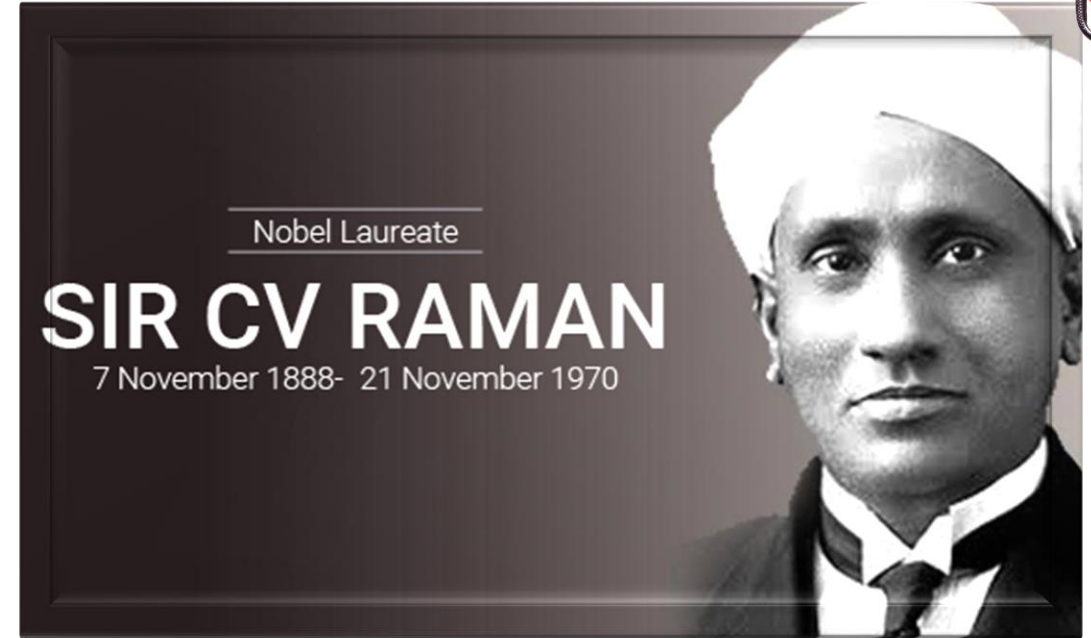


## VISION

- To impart quality education, training and research in the subject areas of Physics and Electronics in the contemporary scenario of higher education.
- To meet the scientific, industrial and societal needs.

## MISSION

- To enrich the knowledge and skills of students through continuous learning and active research.
- To impart technical knowledge to make students to accept the challenges worldwide.
- To maintain active linkage with industrial personnel and to enhance the academia-industry interactive Programmes.



**This department was founded in 1932 under the guidance of Noble Laureate Sir.C.V.RAMAN, and he conducted his research studies at the department labs.**

# DEPARTMENT PROFILE



- Nuclear Physics, Meteorology & Oceanography and erstwhile Applied Physics (now Dept. of Instrumentation Technology) departments emerged from this.
- Naval Science and Technology Laboratories under DRDO
- The Physics Department, from its inception, has been recognized as a reputed centre for research in Ultrasonics, Spectroscopy, solid-state Physics, material sciences, and nanomaterials.
- Pioneered in the area of Atmospheric and Space physics.
- The Department has good research laboratories in Ultrasonics, Solid State Physics, Materials Science, Atmospheric & Space Physics and Liquid Crystals Nano Composites.

# DEPARTMENT PROFILE



➤ **Prof. S. Bhagavantham** –  
Architecture for DRDO Laboratories  
Scientific Advisor to the Govt. of India



➤ **Prof. B. Ramachandra Rao** –  
i) Bhatnagar Awardee  
ii) UGC Vice Chairman  
iii) Rajya Sabha Member



➤ **Prof. K. Rangadhama Rao** –  
World Renowned Spectroscopist



# DEPARTMENT PROFILE

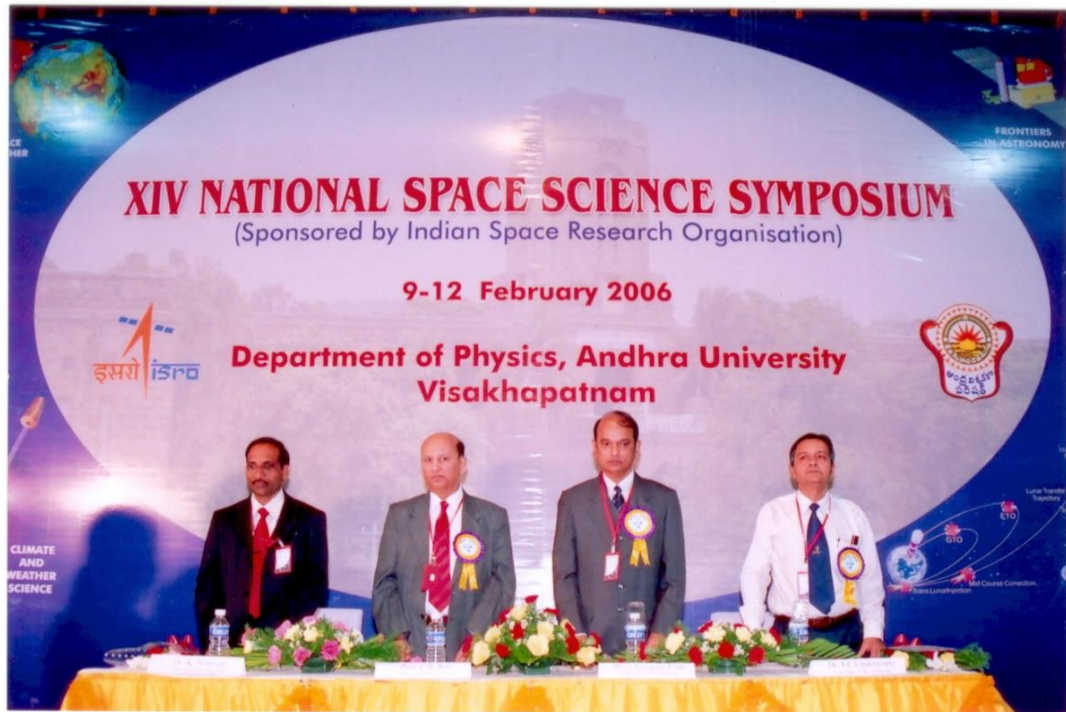


- In India, work on Nuclear Quadrupole Resonance spectroscopy (NQR) was first initiated and the first bromine NQR resonance was observed in India in physics laboratories at Andhra University.
- Contributed to the development of Radio Frequency Spectroscopy which branched into Nuclear Quadrupole Resonance (NQR), Nuclear Magnetic Resonance (NMR) and Electron Spin Resonance (ESR) spectroscopy.
- NMR Research Centre was established with XI Plan UGC Grants.
- The Department was identified as a Centre for Advanced Study (CAS Phase I) in Physics by the University Grants Commission during 2007-2012 and was continued as CAS Phase II since April 2015(2015-2020).



# DEPARTMENT PROFILE

Visit of Dr.U.R.RAO,  
Chairman ADCOS for NSSS



Visit of Dr. G. Madhavan Nair,  
Chairman ISRO for ICARB Review

# DEPARTMENT PROFILE



- CIMEL Inter-comparison during CALIPSO overpass along with our LIDAR (Brent Holben from NASA)



- Focal point for M.Tech Course on Space and Atmospheric Physics being offered by Centre for Space Science and Technology Education in the Asia and Pacific (CSSTE-AP) sponsored by United Nations





# International Collaborations



**“Investigation of ESF Triggers using Balloon-Based and Ground-Based Diagnostics”**

Sponsored by US Air Force through

**ASIAN OFFICE OF AEROSPACE  
RESEARCH AND DEVELOPMENT**

Collaborative research endeavour between

**Andhra University, Vikram Sarabhai Space  
Centre, PRL, TIFR and Boston University**

# National Collaborations



ISRO

Space Physics  
Laboratory, Vikram  
Sarabhai Space  
Centre, Trivandrum

Physical Research  
Laboratory  
Ahmedabad

National  
Atmospheric  
Research Lab,  
Tirupati

Indian Institute of  
Geomagnetism,  
Mumbai

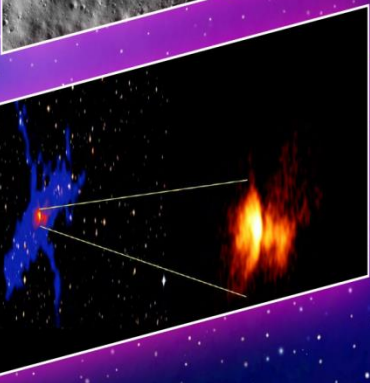
IITM, Pune

National Physical  
Laboratory,  
New Delhi



# National Collaborations

## SPACE RESEARCH IN INDIA



### SPACE RESEARCH IN INDIA

fresh recruits of ISRO under the ISRO Induction Training (IITP) Program. SPL also fulfills its commitment to society by imparting training to the young students, which includes (i) B. Tech and M. Sc. Projects, (ii) M. Tech. and M. Phil Dissertation supervision. So far, more than 500 M. Sc./M.Tech. Project students have carried out their project work at SPL.

#### 2.7 Courses offered on Space Science and Technology

SPL conducts regular Ph.D course work for the Research Fellows selected through the ISRO Research Fellowship program at SPL.

#### 2.8 National Collaborations in Space Science and Technology

SPL collaborates very closely with the academia and other research agencies in India for scientific pursuits, which includes various centers of ISRO, Ministry of Earth Science (MoES), Department of Science and Technology (DST), Department of Atomic Energy (DAE), Council of Scientific and Industrial Research (CSIR), Ministry of Environment and Forest (MoEF), universities and national institutes. The long-term collaborations are listed below:}]

Sl. No.	Area of Collaboration	Collaborating Institutes
1	Regional characterization of atmospheric aerosols over Indian region through the application of ground-based measurements of aerosols and the scientific understanding of the various source and transport processes to understand the radiative and climate impacts.	Indian Institute of Science, Bengaluru
		Tamilnadu Agricultural University, Ooty
		SRM University, Chennai
		S K University, Anantapur
		Goa University, Goa
		National Remote Sensing Centre, Hyderabad
		Tata Institute of Fundamental Research, Hyderabad
		Andhra University, Visakhapatnam
		Indian Institute of Tropical Meteorology, Pune
		Institute of Minerals and Materials Technology, Bhubaneswar
		Regional Remote Sensing Centre (RRSC), Nagpur
		Saurashtra University, Rajkot
		Tripura University, Agartala
		Banaras Hindu University, Varanasi
North Eastern Space Application Centre (NESAC), Shillong		

### SPACE RESEARCH IN INDIA

Sl. No.	Area of Collaboration	Collaborating Institutes
		M L Sukhadia University, Udaipur and Jaisalmer
		Dibrugarh University, Dibrugarh
		Aryabhata Research Institute of Observational Sciences, Nainital
		Punjabi University, Patiala
		Indian Institute of Remote Sensing, Dehradun
		GB Pant Institute for Himalayan Environment and Development, Kullu
		Indian Institute of Astrophysics, Bengaluru
		National Physical Laboratory, New Delhi
		Yogi Vemana University, Kadappa
		Calcutta University, Kolkata
		Dayalbagh Educational Institute, Agra
		DDU Gorakhpur University, Gorakhpur
S V University, Vijayawada		
2	Monitoring of atmospheric boundary layer (ABL) parameters, state variables, and energy fluxes at different geographical locations of India, representing typical geographical and climate conditions prevailing at distinct geographic regions of the country.	North Eastern Space Application Centre (NESAC), Shillong
		Andhra University, Visakhapatnam
		S K University, Anantapur
		Aryabhata Research Institute of Observational Sciences, Nainital
		Goa University, Goa
		Indian Institute of Space Science and Technology, Trivandrum
3	Polar Research	National Centre for Polar and Ocean Research
		Physical Research Laboratory (PRL), Ahmedabad
4	Atmospheric, Space and Planetary exploration	National Atmospheric Research Laboratory (NARL), Gadanki
		Indian Institute of Geomagnetism (IIG), Mumbai
		Indian Institute of Science, Bengaluru
		Indian Institute of Astrophysics (IIA), Bengaluru
		Indian Institute of Space Science and Technology (IIST), Thiruvananthapuram

### SPACE RESEARCH IN INDIA

1. Introduction to near earth space
2. Dynamical, chemical and coupling processes in the Earth's atmosphere
3. Title: Solar Internal Structure and Dynamics
4. UV and X-ray Sun
5. Title: Solar Magnetohydrodynamics
6. Title: Coronal and Heliospheric Processes
7. Title: Instrumentation for Solar astronomy
8. Title: Planetary Atmospheres and Environment
9. Title: Planetary Geology
10. Cosmochemistry
11. Planetary Geochemistry
12. Planetary Remote Sensing

#### 3.8 National Collaborations in Space Science and Technology

Sl. No.	Area of Collaboration	Collaborating Institute
1.	AstroSat/CZTI data analysis	TIFR- Mumbai, IUCAA-Pune
2.	Future X-ray astronomy mission	IIT-Bombay, Mumbai, RRI- Bengaluru, SAG-URSC, Bengaluru
3.	Ionospheric studies	NARL- Gadanki, India
4.	Geomagnetic storm effects on ionosphere	Andhra University, Visakhapatnam, India
5.	Ionospheric studies	IIG- Mumbai, India
6.	Space Science	IIG-Mumbai, SPL/VSSC, NARL (Gadanki), IIT-Roorkee, IIT-Indore, Dibrugarh University, Mumbai University
7.	Wave induced variability in the thermosphere	IIT, Roorkee
8.	Meteor characteristics in the lower thermosphere	University of Osmania
9.	Planetary Science	Anna University, Chennai, IIST
10.	Pulse Laser Testing Facility	IPR, Bhat, Gandhinagar
11.	High Voltage Lightning Testing Facility	CHARUSAT, Changa
12.	Scientific Research: Astrobiological and Geological investigations	School of Environmental Sciences, Jawaharlal Nehru University, New Delhi, India
13.	Scientific Research: Geological investigation of glacial landforms	Indian Institute of Space Science and Technology, Thiruvananthapuram, Kerala

# National Collaborations Thrust areas in Space Science and Technology



- Selected by ISRO as the host institute/ nodal centre of START Programme
- 78 students enrolled and got certified in the programme
- 6 students participated 2<sup>nd</sup> Indian Space Weather Conference organised by PRL, Ahmedabad

# PROGRAMS OFFERED



## PG PROGRAMS

M.Sc Physics

M.Sc Electronics  
(Instrumentation)

## DOCTORAL PROGRAMS

Ph.D Physics

Ph.D Electronics



# OBE FRAMEWORK

- Problem analysis in theoretical Physics, Quantum Mechanics, Statistical Mechanics, Electromagnetism, Mathematical methods of Physics, Instrumentation Techniques and Electronics.
- Design/development of solutions for modern physics, solid state physics and electronics experiments in student laboratories.
- Modern tool usage in research laboratories.
- Environment and sustainability – Lead institution in Geosphere Biosphere program of ISRO
- Ethics
- Individual and teamwork
- Communication



# ELECTIVES

## M.Sc. Physics

- Digital Electronics & Microprocessors
- Principles of Ultrasonics
- Materials Science
- Radar systems and Satellite Communication
- Nano Materials
- Antennas
- Communication Electronics
- Ionospheric Radio Wave Propagation & Sounding Techniques

## M.Sc. Electronics(Instrumentation)

- PLC & SCADA (Control Systems)
- Antenna and Microwave Devices
- Digital Image Processing
- VLSI Design
- Remote Sensing Instrumentation
- Power Electronics
- Power Plant Instrumentation
- Embedded Systems Design



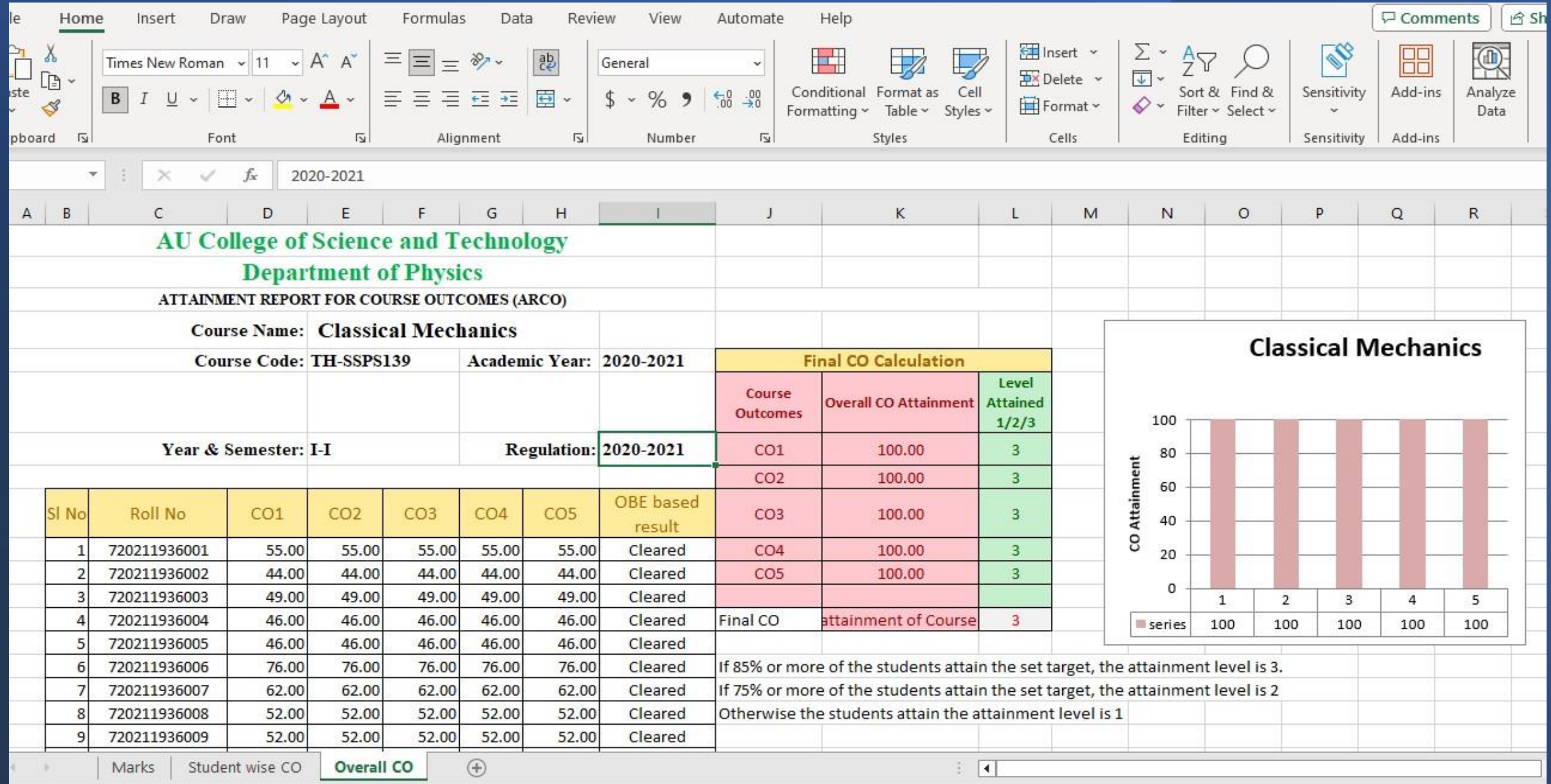
# PROGRAMME OUTCOMES

## M.Sc. Physics

- Gain a deep and comprehensive understanding of core physics concepts, theories, and principles across various subfields such as classical mechanics, electromagnetism, quantum mechanics, solid state physics, statistical mechanics and electronics.
- Able to develop advanced problem-solving skills and critical thinking abilities to analyze complex physical phenomena, derive solutions, and apply theoretical concepts to practical situations.
- Will have honed their mathematical and computational skills, which are essential for advanced physics research and analysis.
- Gain hands-on experience in advanced laboratory work, which might involve usage of sophisticated equipment, conducting experiments, and analysing experimental data to validate theoretical concepts.
- Will be ready to start their career in various educational institutions, research and development centres.



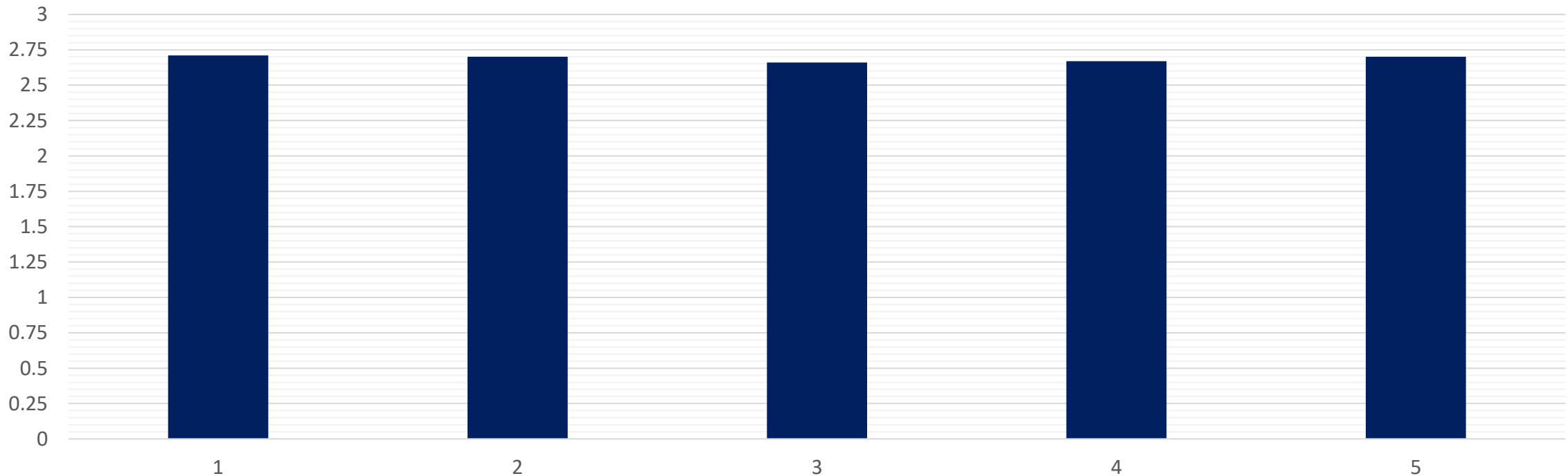
# COURSE OUTCOME ATTAINMENT





# CO & PO mapping and attainment

**PO Attainment Level**  
**(Average PO Attainment of M.Sc Physics**  
**2020-22 Program)**



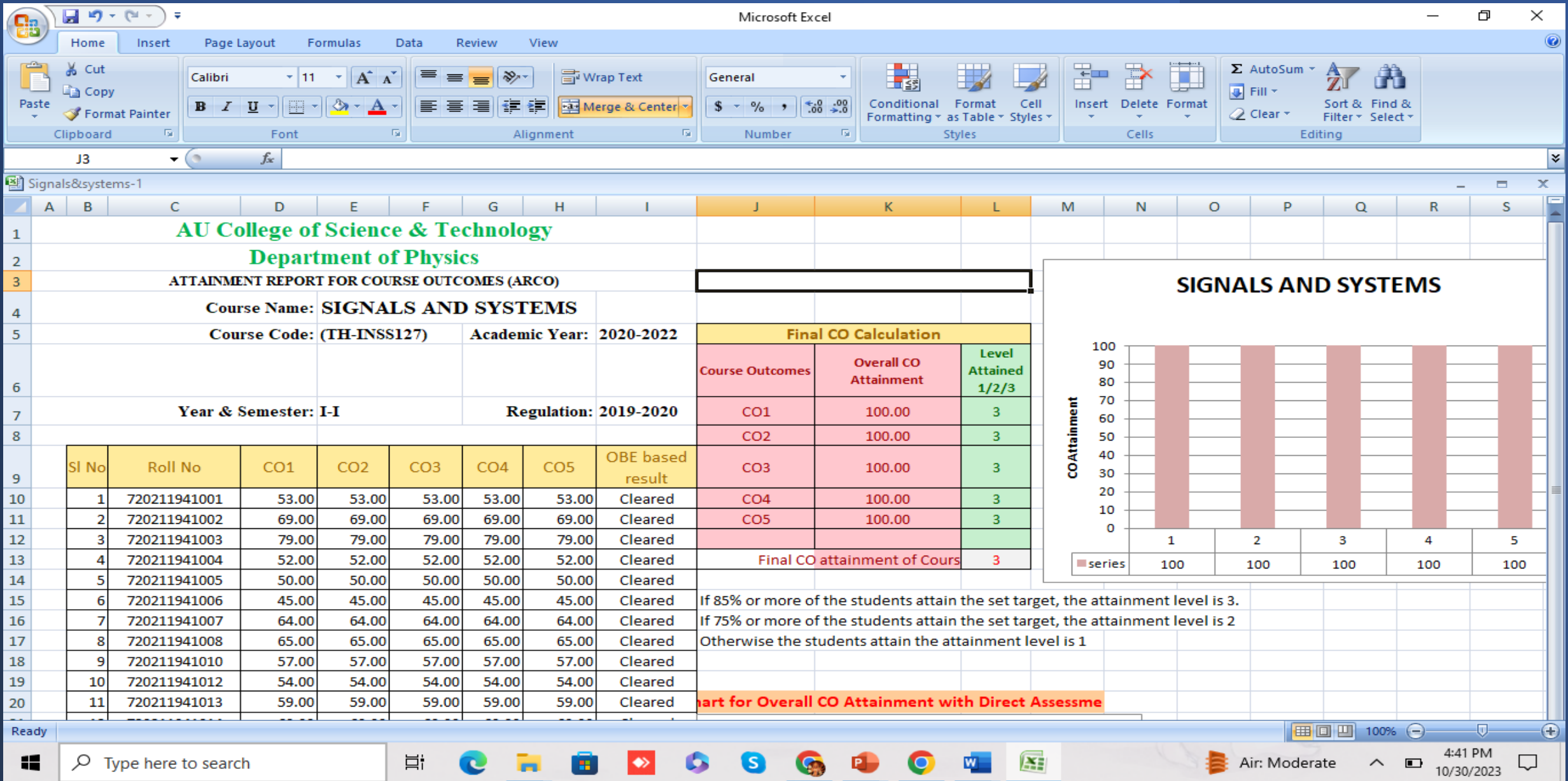


# PROGRAMME OUTCOMES

## M.Sc Electronics (Instrumentation)

- The student will be able to develop extensive knowledge in various areas of Electronics and Instrumentation such as Communication Electronics, Control Systems, Digital Systems Design, Remote Sensing, Bio-medical Instrumentation, Analytical and Industrial Instrumentation, Digital Signal Processing, Microcontrollers, Embedded systems, etc.
- Students will be able to select, install, calibrate and maintain instruments used for measurement and analysis.
- One will be able to design signal analysis and develop the implementation for control schemes used in various industrial processes.
- Can develop the skill set to execute a Project incorporating Industrial standards.
- The student will be equipped to take up a suitable position in various companies that manufacture electronic test equipment, transducers, process control equipment and recording instruments as well as in process industries.

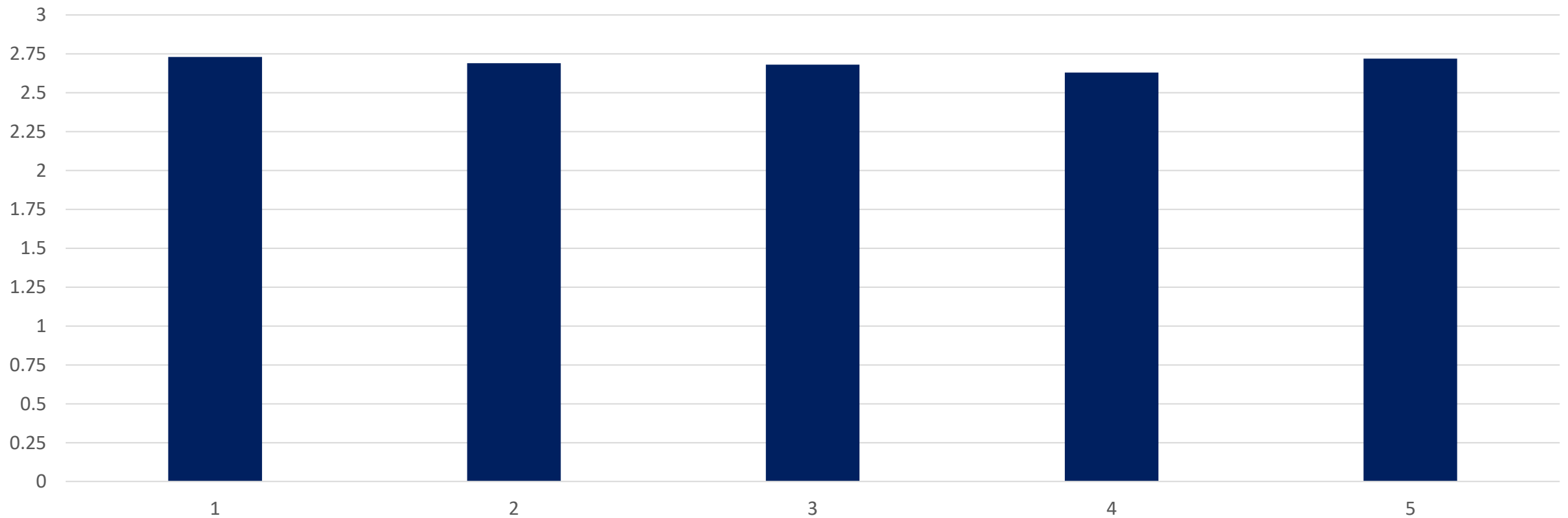
# COURSE OUTCOME ATTAINMENT



# CO & PO mapping and attainment



**PO Attainment Level**  
**(Average PO Attainment of M.Sc Electronics (Instrumentation)**  
**2020-22 Program)**





## Courses with employability/Skill development

- Electronics devices and circuits
- **Electrodynamics**
- Laser and fiber optics
- **Digital electronics and microprocessors**
- Principles of ultrasonics
- **Radar systems and satellite communications**
- Nano materials
- **Antenna theory**
- PLC and SCADA(control systems)

## Value added courses offered

- Intellectual Property Rights (IPR)
- **Research Methodology**

## MOOCS COURSE

- SWAYAM PORTAL
- **AU MOOCS**
- Udemy
- **Coursera**
- Microsoft

# Student Projects

In association with NARL, UNDP,  
SIEMENS, AVANTEL



	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
M.Sc Physics	11	10	11	57	51
M.Sc Electronics (Instrumentation)	39	52	51	30	30

# Faculty's list and profile



Name	Specialization	Number of Ph.Ds Produced	No.of Publications	H-Index
<b>Prof. K.Samatha</b>	<b>Ultrasonics and Solid-State Physics</b>	<b>47</b>	<b>151</b>	<b>19</b>
<b>Prof. M. Ramakrishna Nanchara Rao</b>	<b>Liquid Crystals and Nano Technology</b>	<b>2</b>	<b>55</b>	<b>12</b>
<b>Prof.S.Srinivasa Rao</b>	<b>Atmospheric physics and Space physics</b>	<b>-</b>	<b>10</b>	<b>3</b>
<b>Prof.G.Manikya Rao</b>	<b>Materials Science , Nano materials</b>	<b>-</b>	<b>3</b>	<b>7</b>
<b>Sri D.B. Venkatadri</b>	<b>Instrumentation</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Dr.B.Ravi Kumar</b>	<b>Nano technology &amp; Materials, Computer and Information Sciences</b>	<b>-</b>	<b>-</b>	<b>-</b>



# Faculty's list and profile



Name	Specialization	Number of PhDs Produced	No. of Publications	H-Index
<b>Prof. D.S.V.V.D.Prasad</b>	<b>Space Physics</b>	<b>20</b>	<b>65</b>	<b>19</b>
<b>Prof. K. Niranjan</b>	<b>Atmospheric and Space Physics</b>	<b>36</b>	<b>142</b>	<b>31</b>
<b>Dr. P.S.V.Subba Rao</b>	<b>Solid State Physics</b>	<b>15</b>	<b>102</b>	<b>25</b>
<b>Prof. T.Arunamani</b>	<b>Space Physics</b>	<b>4</b>	<b>4</b>	<b>5</b>
<b>Prof. M.Indira Devi</b>	<b>Space Physics</b>	<b>4</b>	<b>6</b>	<b>4</b>
<b>Prof. V.Veeraiah</b>	<b>Theoretical Physics</b>	<b>27</b>	<b>82</b>	<b>21</b>



## Faculty's list and profile

Name	Specialization	Number of Ph.Ds Produced	No.of Publications	H-Index
<b>Ms. K.S.S.Soujanya Kumari</b>	<b>Electronics /Instrumentation</b>	-	<b>3</b>	<b>1</b>
<b>Ms.N.P.Lavanya Kumari</b>	<b>Electronics /Instrumentation</b>	-	<b>4</b>	<b>1</b>
<b>Mr.M.B.N.Bhushanam</b>	<b>Electronics /Instrumentation</b>	-	<b>5</b>	<b>1</b>
<b>Ms. L.Yamini Swathi</b>	<b>Electronics /Instrumentation</b>	-	<b>3</b>	<b>1</b>
<b>Dr.K.Tarakeswara Rao</b>	<b>Electronics /Instrumentation</b>	-	<b>4</b>	<b>1</b>

Name of the Journal	Impact factor	Name of the Journal	Impact factor
Advances in Space Research	2.611	Journal of Physics: Condensed Matter	2.745
Journal of Materials Science: Materials in Electronics	2.478	Journal of Physics D: Applied Physics	3.207
Space Weather	2.942	Journal of Magnetism and Magnetic Materials	2.993
DE GRUYTER	1.712	<u>Physica B</u>	2.436
Journal of Geophysical Research: Space Physics	2.86	J mater <u>sci</u> : Mater electron	2.478
Liquid Crystals	3.13	JICR,	3.657
Journal of Geophysical Research: Atmospheres	5.217	European Journal of Molecular & Clinical Medicine	4.211
Inorganic Chemistry Communications	3.428	<u>Optik</u> –International Journal for light and electron optics	2.84
Applied Physics A	2.286	Polycyclic Aromatic Compounds	3.744
<u>Heliyon</u>	4	International Journal of Advanced Research	7.33
<u>Modeling Earth Systems and Environment</u>	3.6	International Journal of Computer Engineering in Research Trends	6.549
Advances in Space Research	2.61	Liquid Crystals	3.07
GPS Solutions	3.72	Advanced Powder Technology	4.833
J. <u>Geophys. Res.</u> ,	3.11	Journal of Asian Ceramic Societies	2.546
Icarus,	3.65	Journal of Chemical Engineering	2.694
J. Atmos. Res	5.22	Results in Physics	4.565
Applied Physics A	2.584	Ceramics international	5.532
Journal of Molecular Structure	3.13	Journal of Alloys and compounds	6.371



# Awards, Recognitions/Fellowships

## Prof.K.Niranjan:

- Member, Scientific Advisory Committee, Space Physics Laboratory, Vikram Sarabhai Space Centre, ISRO
- Member, Programme Advisory Committee, Atmos & Space Physics, DST
- Member, INSA Joint National Committee on COSPAR, URSI & SCOSTEP
- Member Final review Committee, Mega Science Vision 2035 on Climate Change, Govt. of India
- Member: Review committee for Aeronomy Satellite proposed payloads, review committee for the shortlisted Venus Proposals, 2018, and Expert Member, for finalising the teams for Indian Arctic Program 2017, 2018
- Visiting Professor, Nagoya University, Japan



# Awards, Recognitions/Fellowships

## Prof DSVVD Prasad :

- Fellow, IETE(FIETE)
- Fellow A.P. Akademi of Sciences (FAPAS)
- Lifetime achievement award-2022 from INSO International Scientist award 2022 on Engineering, Science and Medicine
- I2OR-outstanding Researcher Award -2017 from International Institute of Organized Research.
- I2OR- Outstanding Educator Award 2017 from International Institute of Organized Research

## Prof. K.SAMATHA:

- State meritorious teacher award 2022
- Best Academician Award 2018



# Awards, Recognitions/Fellowships

## Prof. M. Ramakrishna Nanchara Rao:

- Lifetime Achievement Award from VD GOOD International Scientist Awards 2021 on Engineering, Science and Medicine, VDGGOOD Professional Association, India.
- Distinguished Professor Award from ARUNAI, AIRF Awards-2019 (International Researchers Connect and Awards 2019)
- Best Researcher Award (Certificate of Excellence) from EET CRS, Research Wing for Excellence in Professional Education & Industry presented by Education Expo TV Research & Branding Company, Noida, on 18 March 2018.

## Dr.G. Manikya Rao:

- Awarded Prof. P.Tiruvenganna Rao Shastiabdipoorthi Prize for the Best Ph.D., thesis in Physics in the Faculty of Science for the year 2017 in recognition of the merit at the 85 and 86 combined Convocation of Andhra University held on 9 January 2019.



# ADVANCED/SLOW LEARNERS

- NOTE:** Students has been classified as advanced learners and slow learners based on continuous assessment such as internal exams, mid examinations, seminars, special quizzes and grade point secured in each semester i.e.,  $SGPA \leq 6.0$  or  $SGPA > 6.0$ .

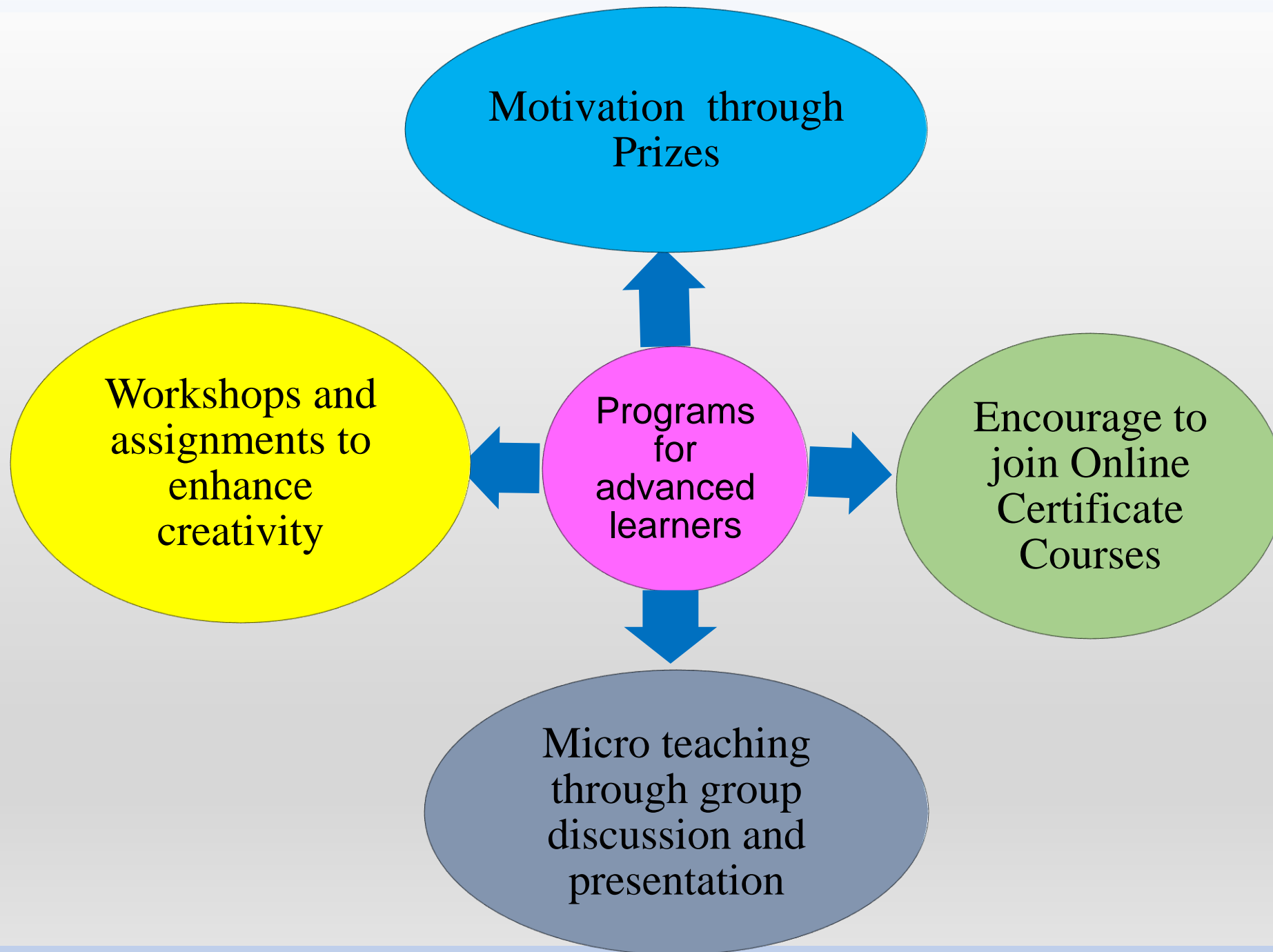
	2017-18	2018-19	2019-20	2020-21	2021-22
Advanced Learners	71	110	93	132	80
Slow Learners	18	11	20	01	00



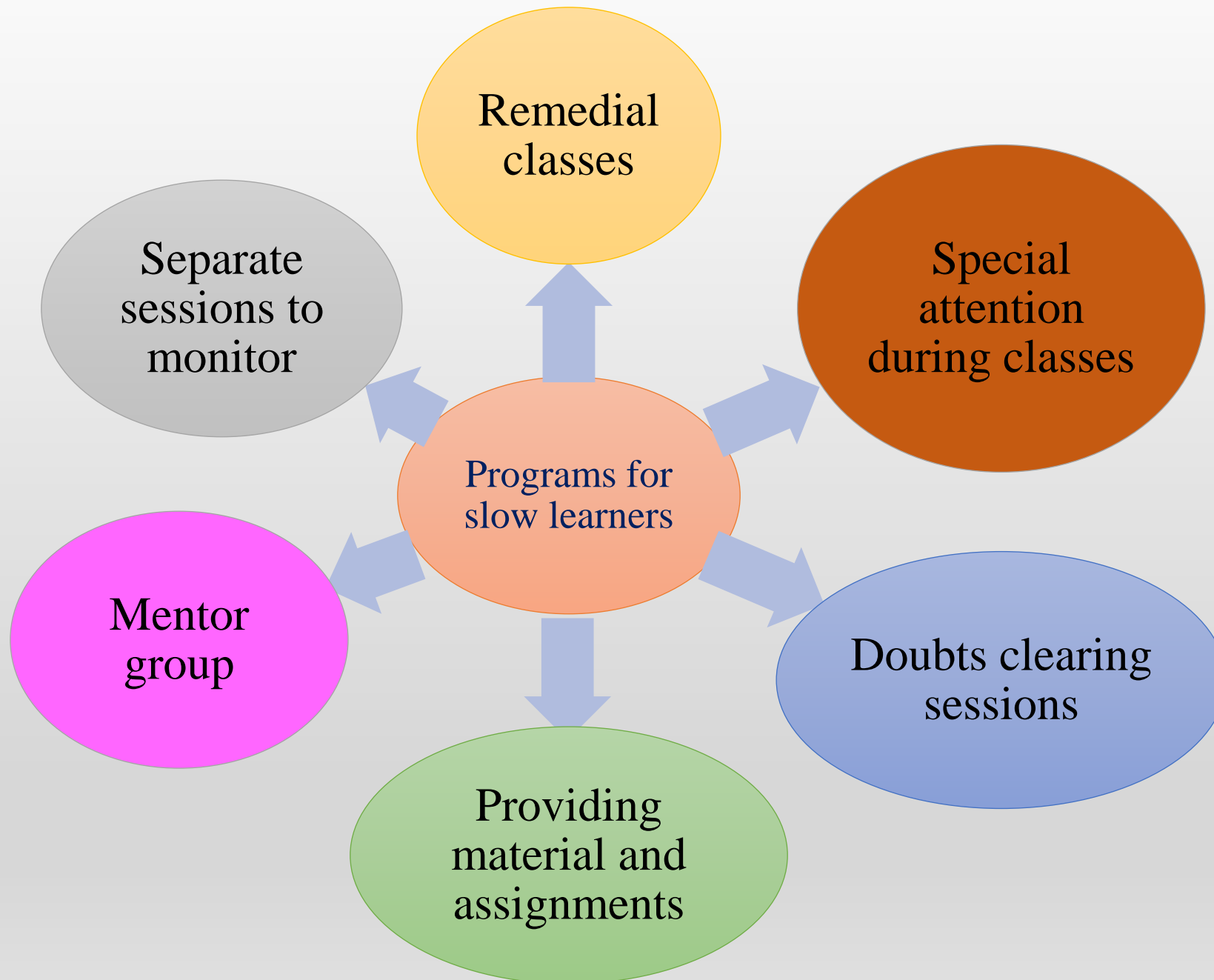
Special Monitoring classes for slow learners

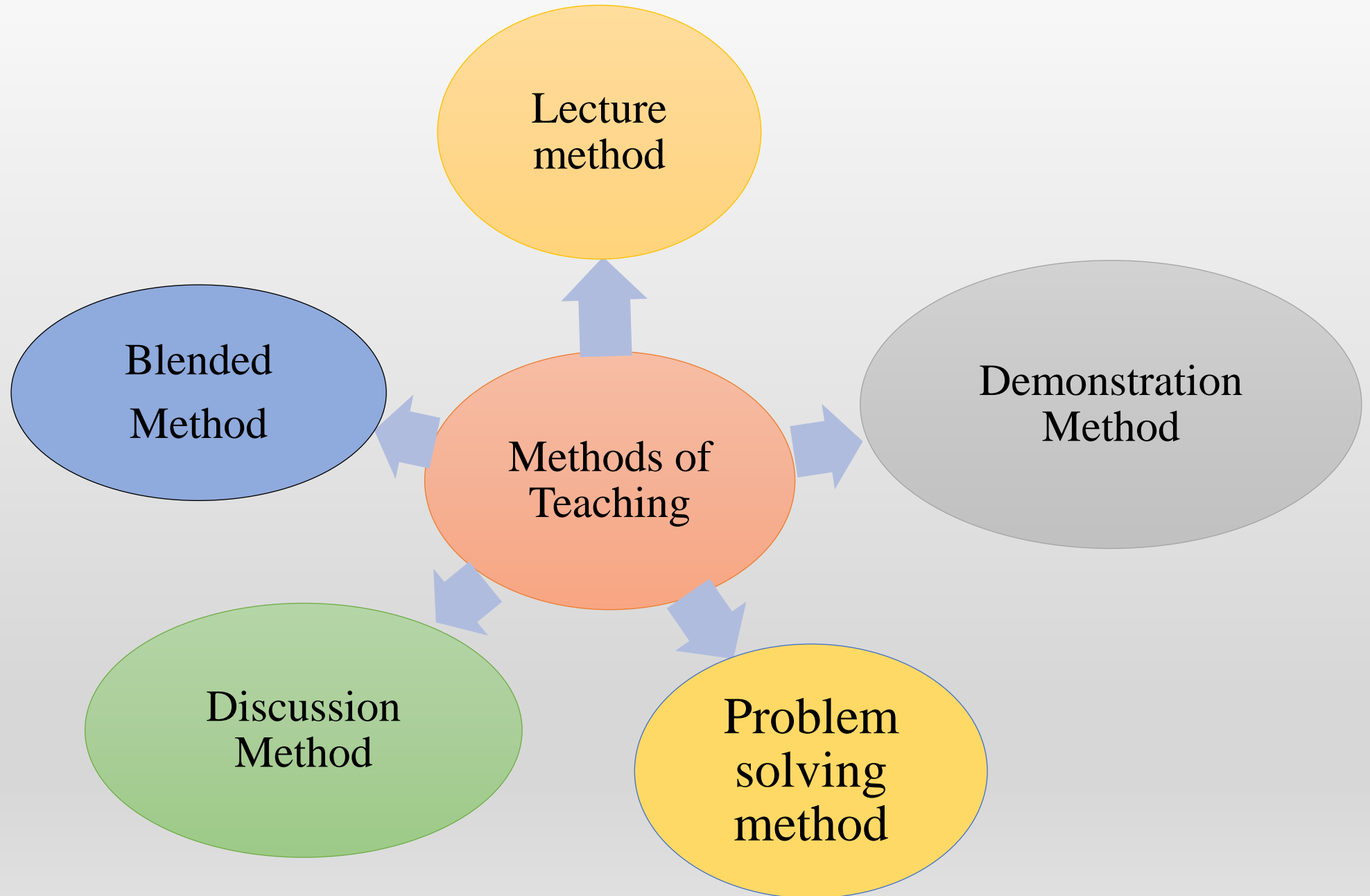


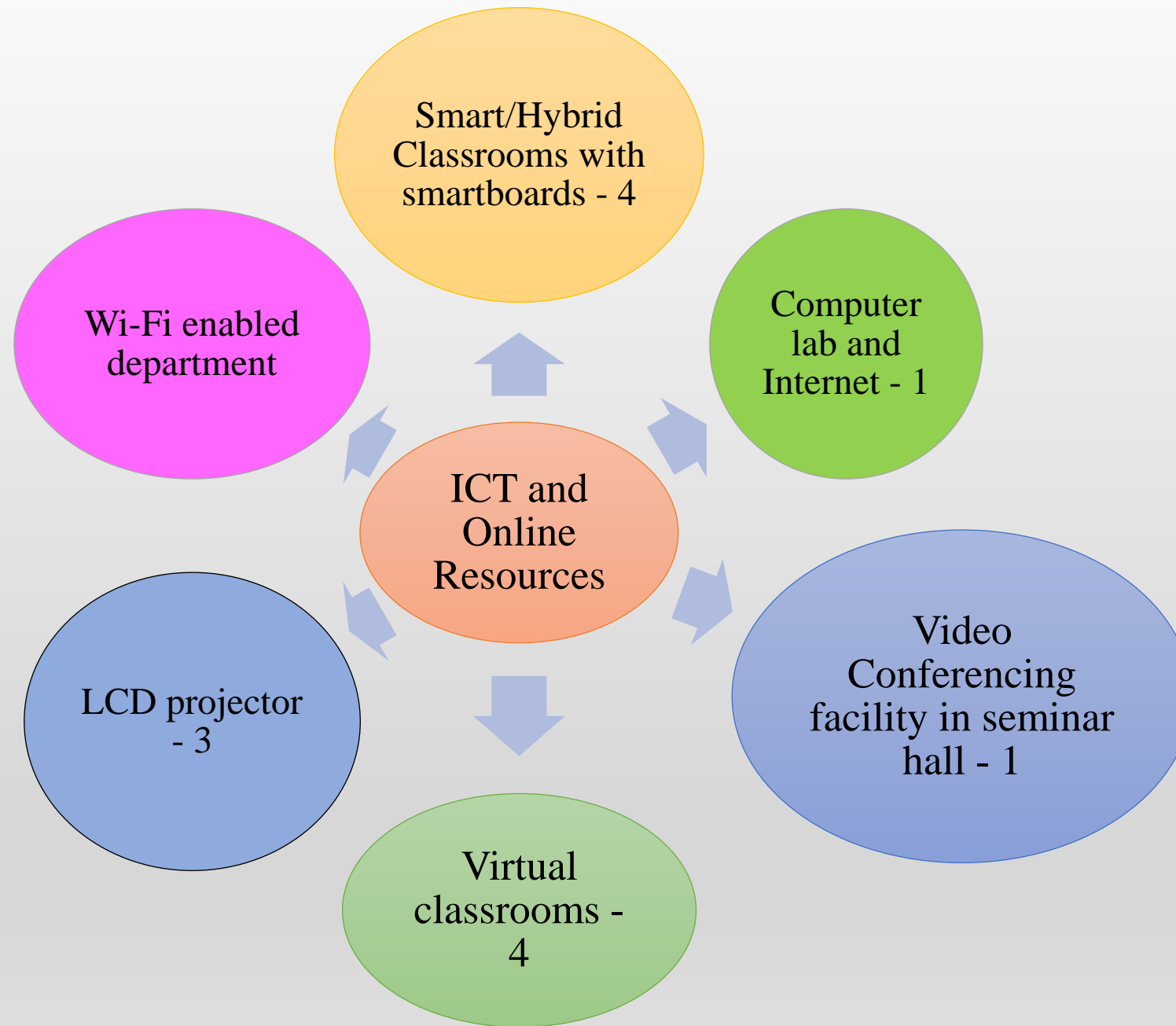
Workshop attended by Advanced Learners

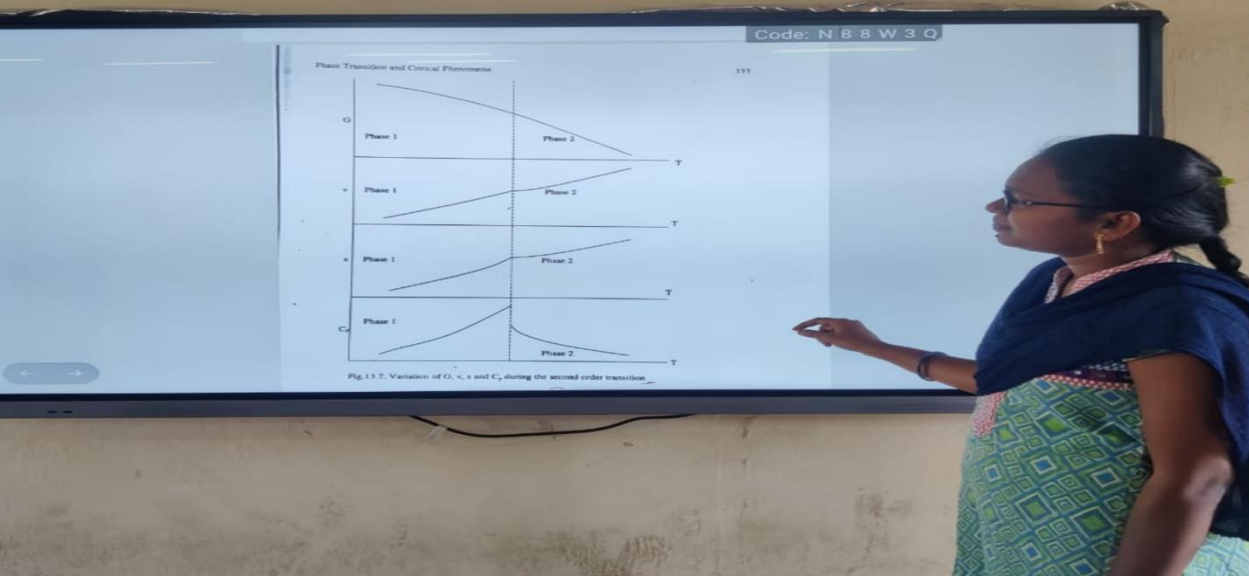








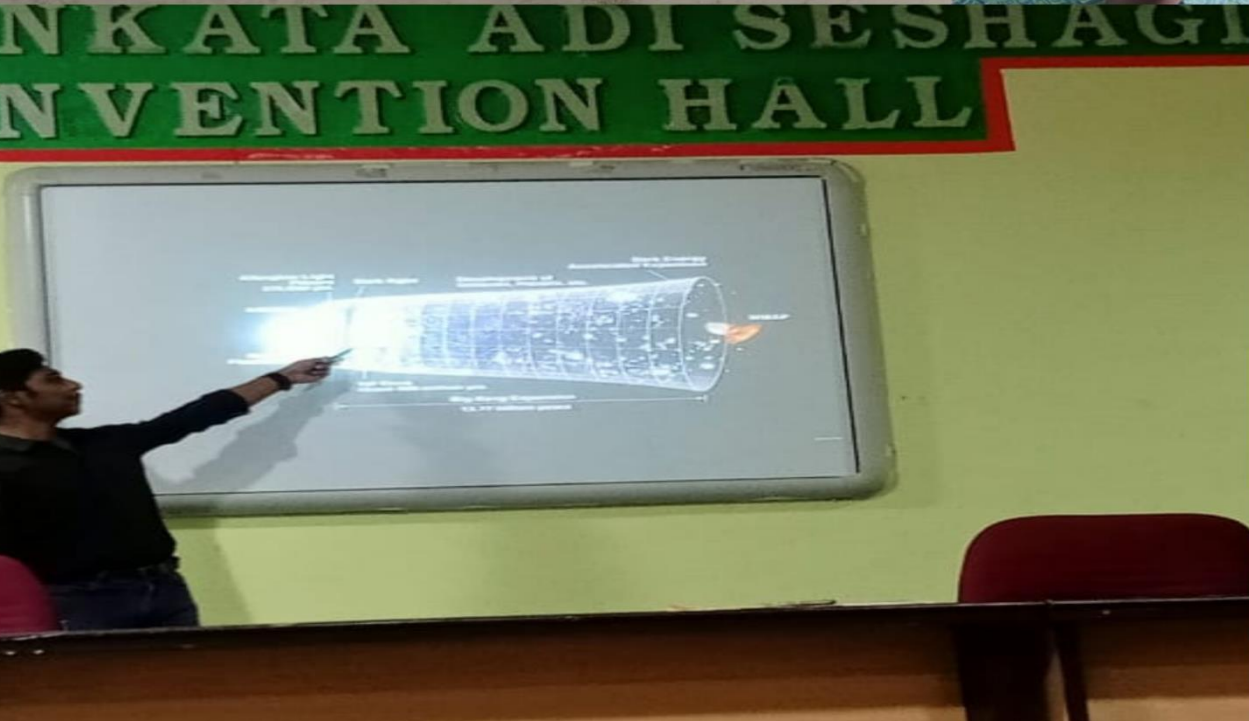




CODE UNAVAILABLE

## Accuracy & precision

Accuracy	Precision
Accuracy is closeness with the true value of the quantity being measured.	Precision is a measure of the reproducibility of the measurement.
Measurement can be accurate but not necessarily precise.	Measurement can be precise but not necessarily accurate.
It can be determined with a single measurement.	It needs several measurements to be determined.
Accuracy may be affected with systematic error.	Precision may be affected with random error.
Accurate values have to be precise in most cases.	Precise values may or may not be accurate.
Degree of conformity.	Degree of reproducibility.



Code: M 4 8 W 3 H

→ please Simon de Laplace

→ Signal → Another signal

→ D.E → Algebraic eqn

↓

ODE →  $m \frac{d^2x}{dt^2}$

PDE →



# STUDENT DEMAND RATIO

	<b>M.Sc Physics</b>				
	2017-18	2018-19	2019-20	2020-21	2021-22
<b>No. of Applications Received</b>	1771	1449	1640	1539	APPGCET has been conducted throughout AP
<b>No. Of Students Intake</b>	77	69	82	57	51
<b>Demand Ratio</b>	1:23	1:21	1:20	1:27	APPGCET has been conducted throughout AP
	<b>M.Sc Space Physics</b>				
	2017-18	2018-19	2019-20		
<b>No. of Applications Received</b>	1683	1400	1507		
<b>No. Of Students Intake</b>	11	10	11		
<b>Demand Ratio</b>	1:153	1:140	1:137		
	<b>M.Sc Electronics (Instrumentation)</b>				
	2017-18	2018-19	2019-20	2020-21	2021-22
<b>No. of Applications Received</b>	1014	1248	1173	810	APPGCET has been conducted throughout AP
<b>No. Of Students Intake</b>	39	52	51	30	30
<b>Demand Ratio</b>	1:26	1:24	1:23	1:27	APPGCET has been conducted throughout AP



CATEGORY	M.Sc Physics									
	2017-18		2018-19		2019-20		2020-21		2021-22	
	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE
SC	10	03	08	02	06	04	03	04	04	04
ST	03	01	02	02	03	01	01	02	01	02
OBC	20	18	26	15	35	18	19	14	16	14
GENERAL	08	14	08	06	07	08	08	06	05	05
FOREIGN STUDENTS	00	00	00	00	00	01	01	01	00	00

CATEGORY	M.Sc Electronics (Instrumentation)									
	2017-18		2018-19		2019-20		2020-21		2021-22	
	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE
SC	02	01	00	00	00	00	00	03	00	01
ST	01	00	00	00	00	00	00	00	00	01
OBC	05	14	09	26	09	25	04	18	06	17
GENERAL	09	07	04	13	04	13	01	04	02	03

CATEGORY	M.Sc Space Physics					
	2017-18		2018-19		2019-20	
	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE
SC	01	01	00	01	01	00
ST	00	00	00	00	00	00
OBC	04	02	01	02	06	02
GENERAL	02	01	04	02	02	00

# RESULT ANALYSIS



	2017-18			2018-19			2019-20			2020-21`			2021-22	
	P	SP	E&I	P	SP	E&I	P	SP	E&I	P	SP	E&I	P	E&I
NO. OF STUDENTS APPEARED	67	10	38	71	08	21	77	12	37	78	10	45	53	27
NO. OF STUDENTS PASSED	62	08	35	52	04	11	71	10	37	54	07	22	52	27
PASS PERCENTAGE	92	80	92	73	50	52	92	83	100	69	70	49	98	100
FIRST CLASS	40	03	25	51	06	19	37	03	22	45	06	19	41	24
DISTINCTION	12	01	15	09	01	12	06	01	09	09	01	03	11	03

P- PHYSICS, SP- SPACE PHYSICS, E&I- ELECTRONICS (INSTRUMENTATION)

# WORKSHOPS/SEMINARS/CONFERENCES/TRAINING PROGRAMMES ATTENDED BY FACULTY



2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
10	08	03	05	08

## Ph. D Awarded

2017	14
2018	13
2019	12
2020	12
2021	10
2022	13

## No Of Research Publications

2017-2022 - 121

2022-2023 - 41

## No Of Ph.D's Awarded

2017-2023 -81



# PATENT PUBLICATIONS



- Analysis of Benzoic acids with nanocomposites for wide angle vision in Liquid Crystal Displays- R.K.N.R.Manepalli
- Field of the Invention- Liquid Crystals with dispersion of nano particles
- Publication Number: 08/2023

# Research Projects Completed /ongoing and Research Grants received



Name of the Investigator	Funding Agency	Title of the project and duration	Amount sanctioned
Prof. K. Samatha	UGC	SAP (CAS)	Rs.1,13,00,000
Prof.K.Niranjan (PI) Prof.S.Srinivasa Rao (Co-PI)	ISRO	ISRO -GBP -ARFI	Rs.1,08,80,226/-
Prof. K. Niranjan	CSIR	Equatorial and subtropical Ionosphere Thermosphere studies over Indian region.	Rs.18,25,400
Prof. K. Niranjan	ISRO-GBP	Network of Boundary Layer Experiments	Rs.1,27,20,405/-

## No. Of Research Scholars- 17 (JRF/SRF/PDF/RA)

S.NO	NAME OF RESEARCH FELLOW	YEAR OF ENROLLMENT	TYPE OF THE FELLOWSHIP
1.	Diana Mojaddedi	2022	ICCSR
2.	A Neelima	2022	SJSGC
3.	Reza Mohammadi	2021	ICCSR
4.	D Kavyasri	2020	CSIR NET JRF
5.	Dr P Peddi Naidu	2020	CSIR PROJECT FELLOW
6.	Tesfay Gebremichael	2020	ICCSR
7.	G M Sravani	2019	DST INSPIRE FELLOWSHIP
8.	D Lissa	2018	DST INSPIRE FELLOWSHIP
9.	S Kiranmayi	2017	BSR FELLOWSHIP
10.	M Bonju Babu	2017	RGNF
11.	V K D Srinivasu	2017	BSR FELLOWSHIP
12.	B Mahesh	2017	ISRO PROJECT FELLOW
13.	P Peddi Naidu	2017	BSR FELLOWSHIP
14.	B Madhavi Latha	2017	BSR FELLOWSHIP
15.	Ch Arun Kumar	2017	RGNF
16.	S J Margarete	2017	MANF
17.	K Sailesh Kumar	2017	RGNF



## Full Time Research Scholars-15

S.No.	Name of PhD scholar(FULL-TIME)
1	P. Mahesh
2	G.M. Sravani
3	Tesfay gebrimical reda(FOREIGN)
4	K.Leela Venkata Naga Sree
5	U.Venkayamma
6	D.Kavyasri
7	Reza Mohammadi(FOREIGN)
8	A.Neelima
9	V.Anusha
10	A.Raju
11	N.Sudhakar Rao
12	Dianan Mojaddidi(FOREIGN)
13	Muppidi Sridevi
14	V.Syamala
15	R.Trisanjya



# UGC-SAP LABORATORY

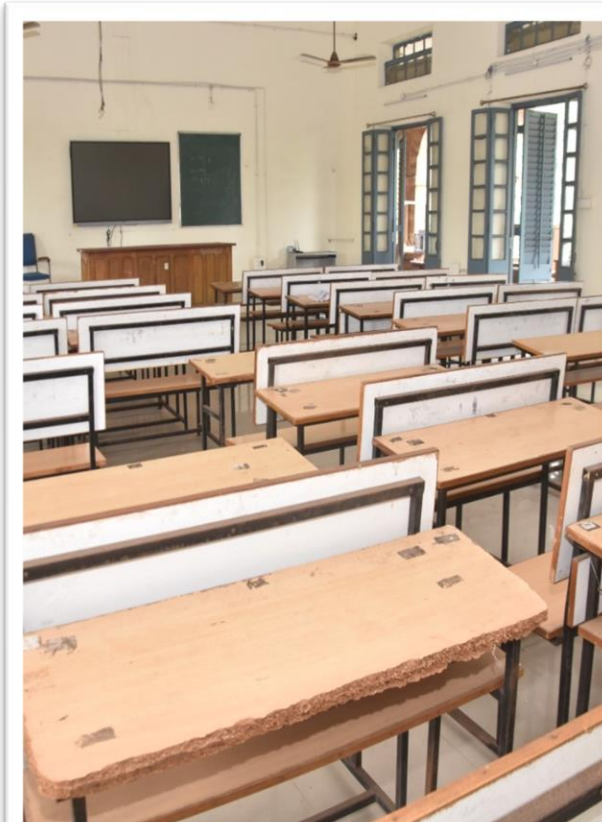
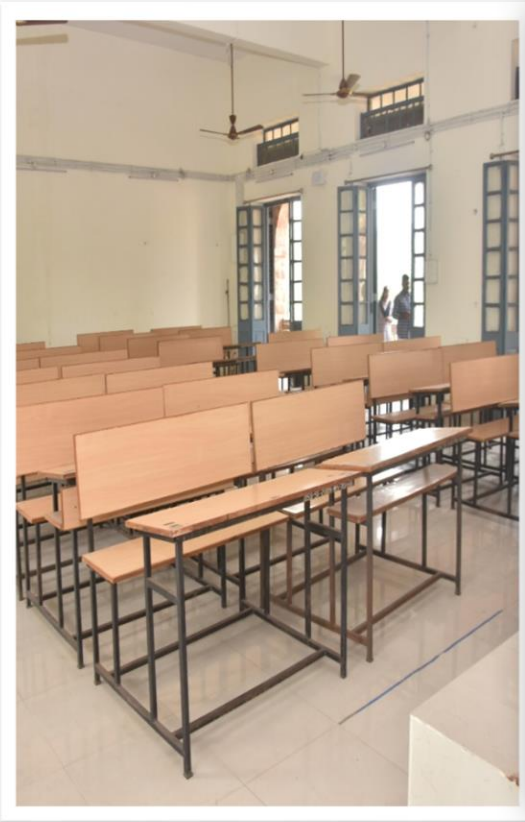


# ATMOSPHERIC AND SPACE PHYSICS LAB



# LIQUID CRYSTALS NANO COMPOSITES LAB

# CLASSROOMS







# SEMINAR HALL



# Teachers in administrative positions



- Prof.V.Veeraiah- Former Vice-Chancellor(10-04-2015 to 08-04-2018), Vikrama Simhapuri University.
- Prof.K.Niranjan- Former Registrar (2018-2019), Andhra University  
Dean Academic Affairs (2016-18), Andhra University
- Prof.K.Samatha- Rector, Andhra University,24-07-2020 to till date.
- Prof.M.Ramakrishna Nancharao- Coordinator, AAL since 2021.
- Prof.S.Srinivasa Rao- Coordinator, Central Examinations Spot Centre, since 2021.



# List of Major equipment

- **DSA 5000 M (Density and Sound Velocity Meter)**
- **Magnetic Stirrer with hot plate**
- **Impedance Analyzer With test probes**
- **High pressure Autoclave**
- **1400 °C & 1800 °C Program Controlled Box Furnaces**
- **Sonicator Bath**
- **P-E Loop Tracer**
- **0.1 mg Analytical Balance**
- **d33 Measurement Unit**
- **Multi Wavelength Solar Radiometer**
- **Polarizing Optical Microscope**
- **Respirable Sampler**
- **Digital Birefringent Spectrometer**
- **Magnetic Stirrer with hot plate**
- **Hot Air Oven**
- **GNSS Receiver**



# Awards to students

## Prof. Suri Bhagavantham Prize

- 2017-2018: G.M Sravani,  
Eram Khan
- 2018-2019: D.Kavyasri  
KAKD Prasad
- 2019-2020: CH.VasanthaRani,  
K.Sri Harshitha
- 2020-2021: G.Manasa,  
M.Jaya Lakshmi
- 2021-2022: B.Preethi  
D.Satya Prasad

## Prof. P. Tiruvenganna Rao Shastiabdipoorthi Prize

- 2017-2018: Dr. B. Brahmaji
- 2018-2019: Dr. Manoj M. R.
- 2019-2020: Dr. GVS. Jayapala Rao
- 2020-2021: Dr. Chandana Ghanta



# AWARDS/MEDALS TO MERITORIOUS STUDENTS IN EVERY CONVOCATION



➤ S.B.P.V.Rama Mohan Rao Memorial Prize

➤ Sripada Gopalakrishna Murty Memorial Gold Medal

➤ The Metcalf Prize

➤ Sri Venkateswara Prize

➤ Prof. Kandual Lakshmi Kantham Prize

➤ Smt.B.Suseela & Prof.B.Ramachandra Rao Shastiabdipoorthi Prize

➤ Prof.K.Subba Raju Shastiabdipoorthi Prize

➤ Prof. K.Rangadhama Rao Centenary Celebrations Gold Medal

➤ Prof.P.V.S.Rama Rao & Smt.Vijaya Lakshmi Shastiabdipoorthi Prize

➤ Mr.&Mrs. Pothinasinganna & Jayalakshmi Gold Medal

➤ Prof.B.RamachandraRao Shastiabdipoorthi Prize

➤ Sri Rayasam Narasimha Murty Memorial Prize

➤ AU 1973-76 Physics Alumni award prize

➤ Sri Vadlamani Venkata Subba Rao Memorial Prize

➤ 1986-89 Alumni prize

➤ Smt.Nozneen Ahmed & Prof.IqhabalAhamed Shastiabdipoorthi Prize

# MEDALS/ PRIZES DURING CONVOCATION



**ANDHRA UNIVERSITY**

ఆంధ్ర విశ్వకళా పరిషత్

Accredited by NAAC with 'A' Grade ISO 9001: 2015 Certified

## Certificate of Merit

This is to certify that **GOKADA MANIKANTA SRAVANI** has been awarded the following Prizes/Madals for securing first rank in Master of Science in Physics for the academic year 2017-2018.

The Prize/Medal is awarded in recognition of the merit at the 87th-90th Combined Convocation of Andhra University held on September 9, 2023.

1. S.B.P.V.Rama Mohan Rao Memorial Prize
2. Sripada Gopalakrishna Murty Memorial Gold Medal
3. The Metcalf Prize
4. Sri Venkateswara Prize
5. Prof. Kandual Lakshmi Kantham Prize
6. Smt. B. Suseela and Prof. B. Ramachandra Rao Shastiabdipoorthi Prize
7. Prof. K. Subba Raju Shastipoorthi Prize
8. Prof. K. Rangadhama Rao Centenary Celebrations Gold Medal
9. Prof. P.V.S.Rama Rao and Smt. Vijaya Lakshmi Shastiabdipoorthi Prize
10. Mr. & Mrs. Pothinasinganna & Jayalakshmi Gold Medal
11. Prof. B. Ramachandra Rao Shastiabdipoorthi Prize
12. Sri Rayasam Narasimha Murty Memorial Prize
13. AU 1973-76 Physics Alumni award prize for Physics
14. Sri Vadlamani Venkata Subba Rao Memorial Prize
15. 1986-89 Alumni Prize
16. Smt. Nozween Ahmed & Prof. Iqhabal Ahamed Shastiabdipoorthi Prize
17. Prof. Tata Suryanaryana Somayaji and Smt Tata Dharamavathi Commoerate Gold Medal

Visakhapatnam,  
September, 9, 2023



  
Vice-Chancellor



**ANDHRA UNIVERSITY**

ఆంధ్ర విశ్వకళా పరిషత్

Accredited by NAAC with 'A' Grade ISO 9001: 2015 Certified

## Certificate of Merit

This is to certify that **DEGALA KAVYASRI** has been awarded the following Medals/Prizes for securing first rank in Master of Science in Physics for the academic year 2018-2019.

The Prize/Medal is awarded in recognition of the merit at the 87th- 90th Combined Convocation of Andhra University held on September 9, 2023.

1. S.B.P.V.Rama Mohan Rao Memorial Prize
2. Sripada Gopalakrishna Murty Memorial Gold Medal
3. The Metcalf Prize
4. Sri Venkateswara Prize
5. Prof. Kandual Lakshmi Kantham Prize
6. Smt. B. Suseela and Prof. B. Ramachandra Rao Shastiabdipoorthi Prize
7. Prof. K. SubbaRaju Shastipoorthi Prize
8. Prof. K.RangadhamaRao Centenary Celebrations Gold Medal
9. Prof. P.V.S.Rama Rao and Smt. Vijaya Lakshmi Shastiabdipoorthi Prize
10. Maharaja Doctor Vikram Deo Varma Medal
11. Mr. & Mrs. Pothinasinganna & Jayalakshmi Gold Medal
12. AU 1973-76 Physics Alumni award prize for Physics
13. Sri Vadlamani Venkata Subba Rao Memorial Prize
14. 1986-89 Alumni Prize
15. Smt. Nozween Ahmed and Prof. Iqhabal Ahamed Shastiabdipoorthi Prize
16. Prof. Tata Suryanaryana Somayaji and Smt. Tata Dharamavathi Commoerate Gold Medal

Visakhapatnam,  
September, 9, 2023



  
Vice-Chancellor

# OTHER FACILITIES TO STUDENTS

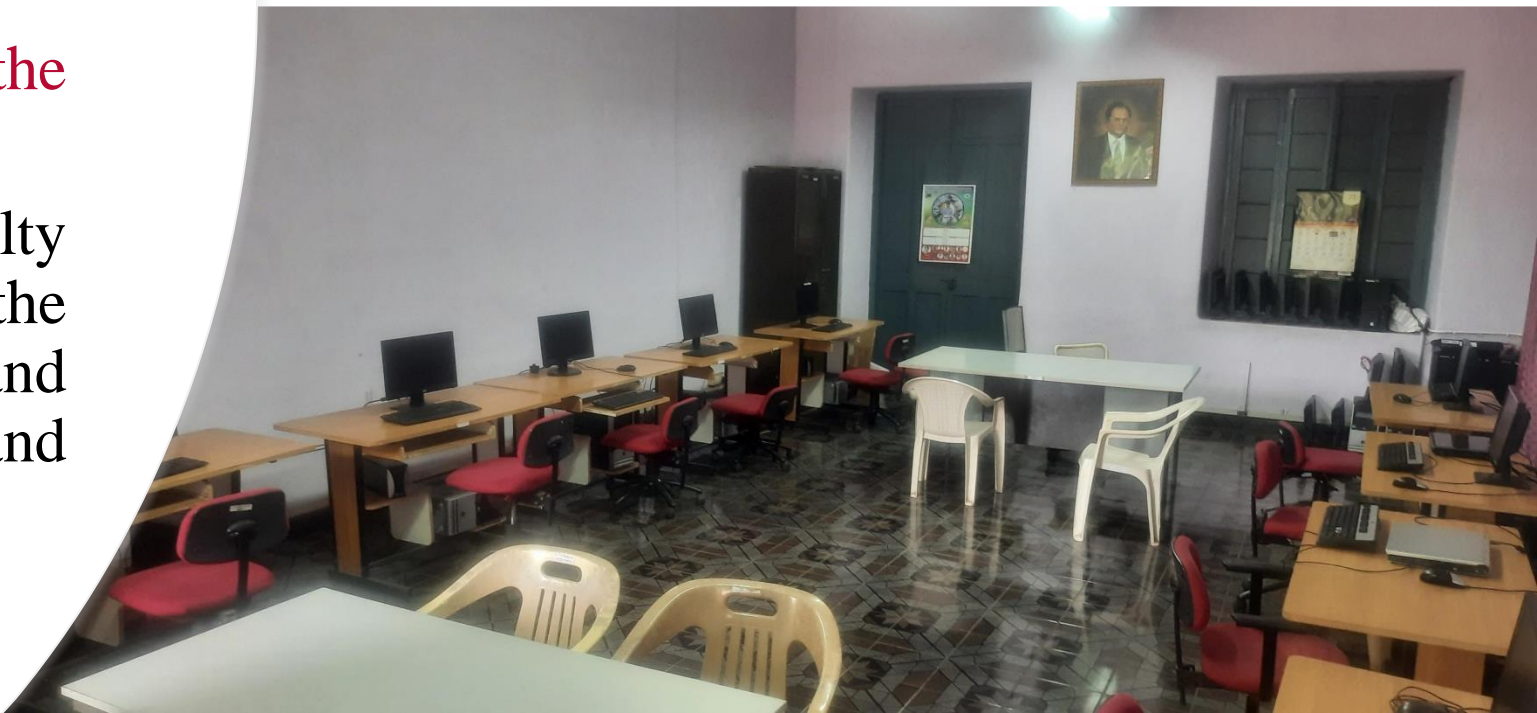


- RO WATER PLANT
- FIRST AID KIT
- READING ROOM
- GRIEVANCE REDRESSAL CELL
- ANTI RAGGING CELL
- CAREER COUNSELLING
- DEPARTMENT LIBRARY



# Library and e-Content

- Total number of books in the department library 10,848
- New books acquired: 545 during the period 2017-2022
- E-content developed by the faculty and the activity geared up due to the need during the pandemic and blended modes of teaching and learning is being implemented.





# STUDENT SUPPORT PROGRAMS



## Mentoring System

All teachers are nominated as student counselors. Also, Proctorial system is adopted by allotting some students to each teacher for counseling and guidance.

Orientation Programmes  
Add on Courses  
Short term Training  
Programmes  
Field Trips  
Project Works

Guest Lectures have been arranged with the cooperation of Faculty for students in various topics  
Students also visited ISRO –SHAR Centre and NSTL as a part of their curriculum during M.Sc

## Reading Room

A student operated Reading room was created with 24x7 access to the students with all textbooks

# STUDENT SUPPORT PROGRAMS



## Events Organized

Besides student's fresher's and farewell functions, Teacher's day and Science day are regularly celebrated every year by organizing meetings with students and staff

## NET and GATE Orientation Programme

Besides regular guidance We encourage students to interact with NET and GATE Qualified students from earlier batches by Organizing interaction sessions

## Social awareness & Soft skills

A Computer center is maintained in the Department and Guest Lectures on spoken English and social aspects are being organized periodically for students progression



# STUDENTS PROGRESSION

YEAR	PLACEMENTS	HIGHER EDUCATION (Ph. D/GATE/AP-SET/CSIR-NET/UGC-NET)
2017-2018	47	03
2018-2019	48	04
2019-2020	34	04
2020-2021	52	04
2021-2022	47	05



Major recruiters are from BYJU's AKASH, FIT-JEE, Sri Chaithanya, Sri Prakash, Avantel, Dr. Reddy's Foundation etc,

## PROMINENT ALUMNI



NAME	ORGANIZATION	NAME	ORGANIZATION
<b>Dr.M. Krishna Murthy</b>	Worked as Chief Controller, DRDO	<b>Prof.K V S Ramana</b>	Worked as Professor, IIT Chennai
<b>Dr.E. Bhagiratha Rao</b>	Worked as Director, DRDO	<b>Dr. J V Ramana Rao</b>	Worked as Director, DRDO
<b>Dr.I. Achyuta Rao</b>	Worked as Director, DRDO	<b>Dr. T R S Reddy</b>	Worked as Director DRDO
<b>Prof.P. Bala Rama Rao</b>	Worked as Director, ISRO	<b>Dr. E V R Rao</b>	Worked Director, ECIL Hyderabad
<b>B V S MURTHY</b>	Worked DGM, ECIL Hyderabad	<b>Dr. C A Reddy</b>	Worked as Director, ISRO
<b>Prof.D V G L Narasimha Rao</b>	Distinguished Professor of University of Massachusetts, USA	<b>H R S Sastry</b>	Worked as Director, DRDO
<b>Dr. P R PANT</b>	Worked as DGM, Survey of India	<b>Prof.J. Sobhanadri</b>	Worked as Professor, IIT Chennai
<b>Dr. Prasada Rao T. A</b>	Worked as Professor, IIT Chennai	<b>Dr.D. Sangameswara Rao</b>	Worked as Scientist H, DRDO
<b>Prof.Raja Ratnam S</b>	Worked as Professor, VNR Vignyanjyothi College	<b>Dr. R V Narayana</b>	Worked as Scientist H, DRDO
<b>Sri C. Rama Rao</b>	Worked as Scientist, DRDO	<b>Dr. P Raghavendra Rao</b>	Worked as Scientist G, DRDO, Hyderabad

<b>NAME</b>	<b>ORGANIZATION</b>	<b>NAME</b>	<b>ORGANIZATION</b>
<b>Dr. H S Rama Rao</b>	Worked as Director, DRDO	<b>Dr.P. Purushothamudu</b>	USA
<b>Dr. D NRU</b>	Worked as Scientist, DRDO	<b>Sri. T Rambabu</b>	ISTRAC, Bangalore
<b>P. Prabhakara Rao</b>	General Manager, ECIL	<b>Dr.T. Buchi Venkata Rao</b>	Scientist, IGCAR, Kalpakkam, Tamil Nadu
<b>Dr. U V Girish Kumar</b>	Former Head, Indian Oil Corporation	<b>Dr. Kamineni K Bose</b>	Virginia, USA
<b>L Girish Kumar</b>	Worked as G M, Andhra Bank	<b>Dr. P T Jayachandran</b>	University of New Brunswick, Alfortnia
<b>Prof.P B Rao</b>	Former Director, NARL& Vice-Chairman, ADCOS, ISRO	<b>Prof.A V Subramanyam</b>	IIT Madras
<b>Prof.B V Krishna Murthy</b>	Former Director, SPL, VSSC, Trivandrum	<b>Dr. Srikanth</b>	Scientist, ISRO
<b>Prof.J H Sastri</b>	Former Director, IIA, Bangalore	<b>Dr. Durga Prasad</b>	Scientist, PRL
<b>Sri Y V S T Sai, IRS</b>	Former Secretary, APPSC, ANDHRA PRADESH	<b>Dr. Venkatesh</b>	Scientist, PRL
<b>Dr. C Murali</b>	National Cancer Institute,	<b>Madhavan</b>	Scientist, IIRS

# ALUMNI CONTRIBUTIONS AND THEIR INTERACTION

## 1971-73 Batch

- 2KV inverter + Batteries –Rs.36,965/-
- Ahuja Amplifiers with mic's(3)-Rs.48,600/-
- Digital Trainer Kits-01(for digital electronics lab)

## 1975-77 Batch

- Function generators-03
- Dual Trace Oscilloscope-03
- Variable Power Supply-03
- Multimeters(Mastech)-02
- Dr. G.V.N.Apparao-Rs.41000/-
- Digital IC Trainers-5 sets
- Sri. V. V. Raghavulu-Rs.1,33,978/-
- Used for Department development works.

## 1981-83 Batch

- Dr.K.Mahesh, USA-Rs.75,000/-
- Used for repairing oblique renovation of switchboards of galleries, classrooms and labs.



Sub: -Acknowledgment for the donation received from Sri V.V.Raghavulu (1975-77 Batch)

On behalf of the Department of Physics, Andhra University, I am extremely happy to acknowledge the receipt of an amount of Rs. 48,600/- (Rupees One Lakh Three Hundred Thirty Nine and Seventy Five Paise only) in donation by Sri Vasuveneti Veera Raghavulu, Alumnus, Department of Physics (1975-77 batch) through cheque No. 284263 dated 09-06-2023 for the Department of Physics, which was handed over by Prof. Arunavati to the Head, Department of Physics, College of Science & Technology, Andhra University.

We would humbly like to extend our grateful thanks to Sri Vasuveneti Veera Raghavulu, Alumnus, Department of Physics (1975-77 batch) for providing the financial support.

Alumni like you are inspiration to all of us. The action of your donation evokes my utmost gratitude. The amount will be utilized as per your instructions only.

Best regards,  
D. B. Venkatesh  
HEAD OF THE DEPARTMENT  
16/6/23



Dr K Mahesh, USA (1981-83 Batch)

SBI

Dear Customer,  
Thank you for banking with State Bank of India.  
Your account has been credited for NEFT received as per the details given below  
Credited to Your A/c: XX5532  
Amount: INR 75,000.00  
UTR No: IOBAN2307013056  
Date: 20/03/2023  
Sent by: U A NARASAYYA  
Sender Bank IFSC: IOBA0000121

This is an auto generated mail. Please do not reply to this message or on this email address. For any query, please contact our toll-free number 1800-112-211.

Do not disclose any confidential information such as Username, Password, etc.

Sincerely,  
SBI NEFT Team



3 Oscilloscopes  
3 Function generators  
3 Power supplies  
Donated by 1975-77



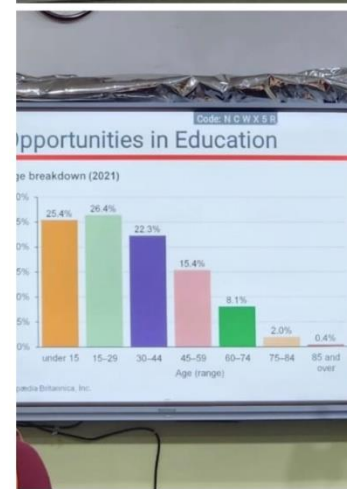
Digital IC trainers - 5sets  
Dr. G. V. N. Apparao (1975-77 batch)

ANDHRA UNIVERSITY  
VISAKHAPATNAM, ANDHRA PRADESH, INDIA  
NAAC - Accredited 'A' Grade with a CGPA of 3.63 out of four point scale

Sl.No. 156 RECEIPT

Received with thanks from Sri / Smt / Prof. / Dr. G. V. N. Apparao for an amount of Rs. 41,000/- (Rupees Forty one Thousand only) on behalf of Cash / Cheque / D.D. No. 000295 on 18-4-2023 with H.D.F.C. Instruments 55 sets of ML4447-Digital IC Trainer kit for the Physics Department Digital Lab - S. N. Mani Kumar Registrar, VISAKHAPATNAM.

Date: 24-5-2023 FINANCE OFFICER / REGISTRAR



# Institution values and Social responsibilities



## ■ Gender Sensitization:

- To ensure a safe space & to promote healthy environment
- Focus on programs to promote women empowerment and gender equality
- Celebrating National Women's day every year and essay writing competition is conducted for girl students.
- Women's grievance cell
- Debates and elocutions on Gender equality

## ■ Anti ragging:

- Anti Ragging committee has been constituted in the campus with teaching faculty to avoid ragging and to create a friendly environment among the seniors and junior students.







# Institution values and Social responsibilities

## Waste Management:

- Waste is collected in dustbins and disposed to university's centralized waste management system. e-waste is separately collected and disposed by GVMC.
- Separate measures are taken for solid, liquid, and hazardous chemical waste management.

## Water conservation:

- Wastewater lines from toilets, washrooms, canteen are connected to the Municipal drainage system.
- Rainwater harvesting pits around the department building for water conservation.





# Institution values and Social responsibilities

## Green Campus:

- Restricted entry of automobiles once in a week
- Pedestrian friendly pathways
- Use of plastic is banned in the campus
- Medicinal plants garden
- Landscape gardens

## Disable friendly environment:

- Ramps are provided for easy access to classrooms and centres by disable students.
- Disabled friendly washrooms.



# NATIONAL SCIENCE DAY



# NATIONAL TEACHER'S DAY



# NATIONAL WOMEN'S DAY





# BEST PRACTICES

Hands - on Learning -  
Experiential learning  
through Observations  
and mini projects.

Student-faculty  
interactions.

Regular Counseling  
sessions on career  
opportunities and  
current science aspects.

Field visits and  
industrial visits.

Student seminars and  
presentations.

Alumni interactions  
with staff and students.

Every Saturday  
students and  
staff participate in  
Swachh Bharat .

Celebration of national  
and international  
prominence days.

# INDUSTRIAL VISITS





# GUEST LECTURES



# EXTRA CURRICULAR ACTIVITIES





# SWACHH BHARATH



# OTHER PROMINENT DAY CELEBRATIONS



# PARTICIPATION IN SOCIAL SERVICE





# FUTURE PLANS

**Focus on interdisciplinary research collaborations with national importance research laboratories and institutions to address complex real-world challenges.**

**Planning to offer online Diploma/ Certificate courses and to develop Virtual labs.**

**To offer M.Sc. Physics with Space Physics Specialization and nanomaterials specialization.**

