

# Department of Physics and Electronics

## Annual Report 2023- 2024

The college reopened for the academic year 2023-24 on June 8<sup>th</sup> 2023 for II and III year students and on August 1<sup>st</sup> 2023 for I years

### ➤ Student strength for the academic year 2023 - 2024:

S.NO	Class	STRENGTH	Class	STRENGTH
01	I B.Sc. Pathway-I & II	79	Nil	Nil
02	I B.Sc Physics minor	34	Nil	Nil
03	II B.Sc Physics	76	II B.Sc Electronics	09
04	III B.Sc Physics	73	III B.Sc Electronics	19
	<b>Total</b>	<b>262</b>	<b>Total</b>	<b>28</b>

### ➤ Results of II, IV ,VI Semesters of 2023 - 2024:

## PHYSICS

Paper	Sem	No. of Students Appeared	No. of Students Passed	No. of Students Failed	Percentage
Physics - II	II	76	76	Nil	100
Physics - IV	IV	71	69	02	97
Physics - V	IV	71	71	Nil	100
Internship	VI	Internship			

## Electronics

<b>Paper</b>	<b>Sem</b>	<b>No. of Students Appeared</b>	<b>No. of Students Passed</b>	<b>No. of Students Failed</b>	<b>Percentage</b>
Electronics - II	<b>II</b>	<b>8</b>	<b>7</b>	<b>01</b>	<b>87.5</b>
Electronics - IV	<b>IV</b>	<b>17</b>	<b>17</b>	<b>Nil</b>	<b>100</b>
Electronics - V	<b>IV</b>	<b>17</b>	<b>17</b>	<b>Nil</b>	<b>100</b>
Internship	<b>VI</b>	<b>Internship</b>			

➤ **Results of I, III ,V Semesters of 2023 - 2024:**

<b>Paper</b>	<b>Sem</b>	<b>No. of Students Appeared</b>	<b>No. of Students Passed</b>	<b>No. of Students Failed</b>	<b>Percentage</b>
<b>Pathway-I</b>	<b>I</b>	<b>79</b>	<b>76</b>	<b>3</b>	<b>96</b>
<b>Pathway-II</b>	<b>I</b>	<b>79</b>	<b>75</b>	<b>4</b>	<b>95</b>
<b>Physics-III</b>	<b>III</b>	<b>71</b>	<b>68</b>	<b>03</b>	<b>96</b>
<b>Physics-VI</b>	<b>V</b>	<b>70</b>	<b>60</b>	<b>10</b>	<b>86</b>
<b>Physics-VII</b>	<b>V</b>	<b>71</b>	<b>63</b>	<b>08</b>	<b>89</b>

## **ELECTRONICS**

<b>Paper</b>	<b>Sem</b>	<b>No. of Students Appeared</b>	<b>No. of Students Passed</b>	<b>No. of Students Failed</b>	<b>Percentage</b>
Electronics -III	<b>III</b>	<b>9</b>	<b>9</b>	<b>0</b>	<b>100</b>
Electronics -VI	<b>V</b>	<b>18</b>	<b>14</b>	<b>4</b>	<b>77.7</b>
Electronics -VII	<b>V</b>	<b>18</b>	<b>14</b>	<b>4</b>	<b>77.7</b>

➤ **Faculty Incharge of Departmental activities:**

- I. Ms. N.Madhuri Rose - Secretary
- II. M. Saraswathi - Treasurer
- III. P.Anusha - Department Library
- IV. Dr. K. Sreelatha, Mrs. M.Saraswathi, - Physics Lab incharge
- V. Mrs K.Srilekha - Electronics Lab incharge

- The work load was distributed equally among all the staff members.

### **Activities of the Department:**

#### **1. Talk on “Steps to be taken to reduce Global warming”**

A Talk on “Steps to be taken to reduce Global warming is given by Dr. A. Nirmala Jyothsna, Head, Dept of Physics & Electronics for NSS students on 21<sup>st</sup> June 2023. In this session, she mentioned various ways of reducing Global warming like Power your home with renewable energy, Driving a fuel-efficient vehicle, Invest in energy-efficient appliances and Reduce, reuse, and recycle etc.



## 2. Internship :

Nearly 14 students of III B.Sc. MECS successfully completed online Internship program on “**Designing Concepts of Embedded systems and it’s Applications**” offered by “**Microlink Information Technoogies**” Vijayawada during May & June 2023 organized by the department of Physics & Electronics.



## 3. Talk on “Various cells and committees for student welfare”

On 4<sup>th</sup> July 2023, a talk on “Various cells and committees for student welfare” is given by Dr. A. Nirmala Jyothsna, the HOD of Physics & Electronics as a part of Orientation

Program for newly admitted I year UG students. She gave a detailed picture on functionality of different committees and cells for supporting and facilitating students.



#### **4. Participation in Five day Interdisciplinary Online FDP:**

Three faculty from the department of Physics & Electronics- Dr.A. Nirmala Jyothsna, Dr.K. Sreelatha and Mrs. M. Saraswathi participated in Five day Interdisciplinary Online FDP on “Institutional initiatives for effective Assessment and Accreditation in the context of NEP-2020” from 7-8-2023 to 11-08-2023 organized at S.S&N College, Narasaraopet in collaboration with CCE, AP.

#### **5. Talk on “Green Skills for Youth: Towards a Sustainable World” on World Youth day 2023:**

A talk is given by Dr.A. Nirmala Jyothsna, the HOD of Physics & Electronics on “World Youth day” on the theme “Green Skills for Youth: Towards a Sustainable World” on August 12<sup>th</sup> 2023 organized at our college by NSS, Red Ribbon Club & Youth Red Cross in collaboration with SETWEL, Eluru and Spoorthy Swachanda Smastha, Raghavapuram.



## 6. Activities of E-hub:

The First meeting of E-HUB was held on 23rd August 2023 at Electronics lab. Students of II B.Sc. M.E.Cs and III B.Sc. M.E.Cs have attended to this meeting.

The various PPT presentations are

- 1) “Wireless charger and Smart door lock” by SK. Jasmine and SK. Jeenath of II B.Sc M.E.Cs.
- 2) “Sensor and Smart wallet” by N.Madhavi Durga and K. Lakshmi Durga of II B.Sc M.E.Cs.
- 3) “Apple Air tag” by SK.Sabeena and CH.Gayathri of III B.Sc M.E.Cs.
- 4) “Dyson Purifier Cool Formaldehyde” by P.Jagruthi and V.Aishwarya of III B.Sc M.E.Cs.

As a part of E-HUB all the participants had a quiz on the above topics. All the students actively participated in the quiz and the final winners of the quiz were distributed prizes.

Dr.Mrs.A.Nirmala Jyosthna, Head of department of Physics & Electronics gave a valuable message on this event and appreciated the participants for the good presentations on smart Electronic devices.





## 7. Activities of SCOPE Club :

The first meeting of the SCOPE Club for the year 2023 - 2024 was held on 4<sup>th</sup> September 2023 at 10:15AM in media center. I B.Sc. Physical Sciences and III B.Sc. (MPCS, MPC) students have presented PPTs related to Chandrayaan in this Club.

1. The Chandrayaan-1 objectives and accomplishments were explained by D.Vijayalakshmi , Md. Shahin Almas, P. Kavyanjali of III B.Sc.MPCS.
2. The Chandrayaan-2 Mission- its launch and details of the mission were explained by L. Varalakshmi, B. Jaya Naga Durga, D. Prasanna of III B.Sc.MPCS.
3. The Chandrayaan-3 and its success journey was presented by M. Blessy, Y. Harshitha, V. Reethika, K.Varshini , V. Tarani, P. Vijaya pallavi, V. Durga Bhavani, M. Nasreen of III B.Sc.MPCS.

Later, the summary of three Chandrayaan missions was given by L. Varalakshmi of III B.Sc.MPCS.

Dr.A.Nirmala Jyothsna, Head of the department of Physics & Electronics and Dr.K Sreelatha have responded on the program and motivated the students by their valuable messages.



## 8. Workshop on “PCB Designing & Manufacturing”

Dept. of Physics & Electronics, has organized a Workshop on “PCB Designing & Manufacturing” on 13<sup>th</sup> & 14<sup>th</sup> September 2023 in collaboration with MICROLINK Technologies, Vijayawada, Sponsored by RUSA (2.0) in association with IQAC. The students of Government Degree college, Eluru , St.Vincent De-Paul college, Eluru, students of I M.Sc. Physics & III B.Sc. MPC, MPCS and MECS of Ch. S. D. St.Theresa’s College for Women(A), Eluru have participated in this work shop. Altogether 110 students have participated in this workshop. The resource persons were Sri. V. Govinda Rao, Technical Director, Microlink Information Technologies, Vijayawada and Mr.V.Samba Siva, Commercial Director, Microlink Information Technologies, Vijayawada.

The Workshop was inaugurated on 13<sup>th</sup> September, 2023 at 9 AM for which the faculty of the department of Physics & Electronics, Principal, Dr. Sr. Mercy P, Vice-Principal, Sr. Maria Christia, the resource persons and the participants were present. Dr. Sr. Mercy P. gave the opening remarks in which she stressed the need for updating Knowledge in Electronics & learning the Circuit designing and manufacturing skills to put the theoretical knowledge into practice.

There are 4 technical sessions in which they have learnt the skills designing the circuit using PCB Wizard 3.1.5 software, etching, drilling, mounting, soldering and connecting the circuits on the Printed circuit board. Students have designed the following circuits

1. Regulated Power supply
2. IR Tester
3. Night lamp

The workshop has ended with Valedictory session on 14<sup>th</sup> September, 2023 at 4:00 PM at Media Centre in which students were given the certificates. This workshop has instilled



confidence in them so that, they can take up more innovative & higher level projects in future.

Dr.A.Nirmala Jyothsna, Head, Dept. of Physics & Electronics has given her valuable message by explaining the importance of learning PCB designing & Electronic devices which provides job opportunities in the field of Electronics.







## 9. St. Theresa's feast:

On 4<sup>th</sup> October 2023, Department of Physics & Electronics celebrated St. Theresa's feast, Gandhi Jayanthi and Lal Bahudhur Sastry Jayanthi. The program started with a prayer dance by I B.Sc. Physical Science students which invoked God's blessings on to us. Then all the management sisters and HOD's of various departments paid tributes to St. Theresa, our Patroness, Mahatma Gandhiji and Lal Bahudhur Sastriji by offering roses to their portraits. Then, there is a dance by III B.Sc. MPCS students depicting the life of St. Theresa and about her great virtues. Later, our correspondent Mother Ernestine Fernandes blessed the gathering and conveyed her best wishes. A video which showcased the important incidents in the spiritual life of St. Theresa was shown as "Glimpses of St. Theresa's life".

Then, there was a short skit as a conversation among students about our National leaders which highlighted the noble qualities and their sacrifices for our nation. Then, our Principal Dr.Sr.Mercy. P conveyed her wishes and greetings to all the Theresians. She advised the students to take St. Theresa as a role model who did little things with great love





## **10. International conference on “APPLIED SCIENCES – ADVANCES & APPLICATIONS 2023 ” Sponsored by RUSA**

Department of Physics & Electronics has organized an INTERNATIONAL CONFERENCE ON “APPLIED SCIENCES – ADVANCES & APPLICATIONS 2023” Along with other science departments on 13<sup>th</sup> and 14<sup>th</sup> October 2023.

### **11. Guest lecture:**

The department of Physics & Electronics organized a Guest lecture for I B.Sc. Physical Sciences students on 14<sup>th</sup> October 2023 at 12PM in seminar hall. Dr.G.Sahaya Bhaskaran, Professor, Dept. of Physics, Andhra Loyola College, Vijayawada, gave a guest lecture to our physics students on “**Future scope for Physics in present world**”. In his lecture, he explained the importance of Physics subject in different fields. He also explained about the pathway courses introduced for Physical Sciences students under NEP. Altogether, 100 students participated and were enlightened on the need for study in Physics in the developing world.





## 12. Activities of E-Hub-2:

The E-HUB-2 was held on 18<sup>th</sup> October 2023 at Electronics lab. Students of II B.Sc. MECS and III B.Sc. MECS have attended this meeting.

V.Aishwarya , the president of E-Hub facilitated the program. The event started at 11.30 AM with prayer lead by N.Akhila of II B.Sc. MECS.

The E-HUB had various PPT presentations like

- 1) “Alarm Carpet” by S.Ayesha Farhana, Vishnu Priya of III B.Sc MECS.
- 2) “Play station-4” by B.Meenakshi of III B.Sc MECS.
- 3) “Night vision and Technology” by K.Lakshmi Durga of II B.Sc MECS.
- 4) “Pill Camera” by N.Akhila of II B.Sc MECS.

By the end of the program, Dr.A.Nirmala Jyothsna, Head of department of Physics & Electronics gave her valuable message on this event and appreciated the participants for their presentations on smart Electronic devices. Ms.N.Madhuri Rose, faculty in Electronics gave important suggestions to the participants to make E-Hub more informative and lively.

At last the event came to an end by vote of thanks proposed by M.Akanksha, the secretary of E-HUB.



### 13.Silver Jubilee celebrations:

The Silver Jubilee celebrations of Sr.Inyasamma, Superintendent and Mrs.M.Prasanna Lakshmi, Typist took place in the auditorium at 9.30AM on 30<sup>th</sup> October 2023.

All the management, faculty, office staff, non-teaching staff and students came together to celebrate this momentous occasion in a grand manner. The program started with a prayer and the two celebrities were felicitated by the management, faculty, office staff, guests and family members. Correspondent Mother Ernestine Fernandes, Vice-Principal Sr. Maria Christia and PG Directress and Controller of Examinations Sr.Suseela wished the silver Jubliarians and blessed them for a happy and healthy life. Felicitations were followed by cultural program by students.

This program was organized by the department of Physics & Electronics headed by Dr.A.Nirmala Jyothsna.





#### **14.SCOPE club:**

The second meeting of the scope Club for the year 2023 - 2024 was held on 20<sup>th</sup> December 2023 at 12:00pm. II B.Sc. Physical science (MPCs,MPC,MECs) students participated in this meeting. The topic “Energy conservation” was taken up by the students.

- The nanotechnology -It's objectives and accomplishments were explained by Sowmya and shekela of II B.Sc.MPC.
- The Renewable energy resources- it's objectives and importance were explained by K.Navya of IIRD B.Sc.MP computers.
- The Offshore renewable resources- it's objectives and its uses was explained in detail by Jasmine and N.Madhavi dugra of IIRD B.Sc.MECs.

Dr.A.Niramala Jyosthna, Head of the department of physics and electronics and Dr.K Sreelatha have responded on the program and motivated the students by their valuable messages.



### **15.National Science day:**

The National Science day was celebrated on 28<sup>th</sup> February 2024. Altogether 400 students from 5 schools have visited the science Exhibition arranged in Physics & Electronics labs. Students of 9<sup>th</sup> standard from St.Theresa's (EM &TM) High school, Amalodbhavi school, St.Xavier's (EM &TM) high school, St.Xavier's (Co-education) high school.

The B.Sc. electronics students, M.Sc. Physics students explained the principle and working of the projects which rouse interest among School students. They were also shown the various electronic components and different apparatus of light & Physics and the principles were explained by our department faculty members.

Students visited Optics lab in which they have observed dispersion of light through prism and grating using spectrometer. They have also learnt about Telescope. The students



watched short film videos related to Birth of our Universe, launching of rockets, planetary motion, Newton's laws etc. which they enjoyed a lot.

The students felt that this visit is very educative and informative. They understood the physics related principles and the working of various instruments. They were very much motivated by different live Electronics projects which created interest in them towards Electronics.





## 16. Women Achiever Award - 2024 :

International Women's day was celebrated on 5<sup>th</sup> March 2024 in the college auditorium by Women cell. Along with Dr. Sr. Mercy P, Principal , Dr. A. Nirmala Jyothsna was presented “**Women achiever**” award by “department of Youth services”, SETWEL, Eluru, Govt. of A.P & “Women Cell” of our college.



## ➤ BOS Meeting

1. The BOS meeting was held on 23<sup>rd</sup> January 2024 for Physics and Electronics. . Dr. S. Rajya Lakshmi Asso.prof in Physics, Adikavi Nannaya University was the Physics University nominee. Dr. Ch. Srinivasa Rao, Leturer, Dept. of Physics, Andhra Loyola College, Vijayawada was the Physics Subject Expert. Dr. B. Balaji Bhanu, Head,

Dept of Electronics, Andhra Loyola College, Vijayawada was the Electronics University nominee.

### ➤ **Community Service Project:**

The CS project on “Household survey on Electricity Consumption/Socio-Economic survey”. Total 35 students of I. B.Sc. MPCS have done the CS Project. CS project viva was held on 1<sup>st</sup> July 2023

External- Dr. Ch.V.Mahalakshmi, HOD of Telugu &Hindi

Mrs.N.Bhavani, faculty, dept. of Telugu

Internal- Dr.K.Sreelatha, faculty, dept. of Physics & Electronics

### ➤ **Subject Project:**

The subject project on “Designing Concepts of Embedded Systems & its Applications”. Total 14 students of II B.Sc. MECS have done the subject Project. Subject project viva was conducted on 31st June 2023

External- Dr.V.Naga lakshmi, faculty, dept. of Chemistry.

Internal- Dr.A. Nirmala Jyothsna, HOD of Physics & Electronics.

Project titles are as follows:

1. Signal based train speed control
2. Poisonous gas detection in Coal mines
3. Crude oil level monitoring & Fire protection
4. Digital counter for crowd control

### ➤ **Staff Achievements :**

#### **1.Awards :**

- 1) Dr.K.Sreelatha received the prestigious **Dr. APJ Abdul Kalam Life Time Achievement National Award** in 18-11-2023 for the outstanding excellence in the field of Teaching, Research and Publications conferred by the **International Institute for Social and Economic Reforms(R), Bengaluru.**





2. Dr. A. Nirmala Jyothsna was presented “**Women achiever**” award by “department of Youth services”, SETWEL, Eluru, Govt. of A.P & “Women Cell” of our college on International Women’s day which was celebrated on 5<sup>th</sup> March 2024 in the college auditorium by Women cell.



### 3. Publications :

S. No	Faculty Name	Department name	Publication Title	Details of publication
1	Dr.A.Nirmala Jyothsna & DrK.Sreelatha	Physics & Electronics	Visible spectrophotometric methods for the quantitative estimation of lopinavir in their formulations	International Journal Of Innovations In Engineering Research And Technology [IJIERT] ISSN: 2394-3696 Website: <a href="http://ijert.org">ijert.org</a> VOLUME 10, ISSUE 6, June -2023
2	DrK.Sreelatha	Physics & Electronics	Effect of Ce <sup>3+</sup> on structural, morphological, dc electrical resistivity and magnetic studies of Co nano ferrites	Inorganic Chemistry Communications 154 (2023) 110918 Available online 16 June 2023 1387-7003/© 2023 Published by Elsevier B.V.
3.	Dr.A.Nirmala Jyothsna	Physics & Electronics	A novel nickel-doped photoactive nanocomposite materials for the application of wastewater treatment	<b>Elsevier Publication</b> Inorganic Chemistry Communications journal homepage: <a href="http://www.elsevier.com/locate/inoche">www.elsevier.com/locate/inoche</a> Volume 160, February 2024, 111945

### 4. Book Publications:

S. No	Faculty Name	Department name	Publication Title	Details of publication
1	Dr.A.Nirmala Jyothsna & DrK.Sreelatha	Physics & Electronics	Visible spectrophotometric methods for the quantitative estimation of lopinavir in their formulations	International Journal Of Innovations In Engineering Research And Technology [IJIERT] ISSN: 2394-3696  Website: <a href="http://ijert.org">ijert.org</a> VOLUME 10, ISSUE 6, June -2023
2	DrK.Sreelatha	Physics & Electronics	Effect of Ce <sup>3+</sup> on structural, morphological, dc electrical resistivity and magnetic studies of Co nano ferrites	Inorganic Chemistry Communications 154 (2023) 110918  Available online 16 June 2023  1387-7003/© 2023  Published by Elsevier B.V.
3.	Dr.A.Nirmala Jyothsna	Physics & Electronics	A novel nickel-doped photoactive nanocomposite materials for the application of wastewater treatment	<b>Elsevier Publication</b>  Inorganic Chemistry Communications  journal homepage: <a href="http://www.elsevier.com/locate/inoche">www.elsevier.com/locate/inoche</a>  Volume 160, February 2024, 111945
4	DrK.Sreelatha	Physics & Electronics	Spectroscopic Properties of Borate Glasses Doped with a Transition Metal Ion	GIS SCIENCE JOURNAL <a href="http://www.gisscience.net?VOLUME-10-ISSUE-11-2023/">http://www.gisscience.net?VOLUME-10-ISSUE-11-2023/</a>  <b>Nov 2023</b>  VOLUME 10, ISSUE 11, 2023 ISSN NO: 1869-9391  <b>Pg No: 35 - 41</b>
5	Dr.K.Sreelatha	Physics & Electronics	A Review on Applications of Smart Materials	International Journal of Novel Research and Development <b>November 2023</b>  © 2023 IJNRD   Volume 8, Issue 11 ISSN: 2456-4184  <b>Pg No: a418 – a424</b>  IJNRD.ORG

				Impact factor: 8.76
<b>6</b>	Dr.K.Sreelatha	Physics & Electronics	Scientific Report Writing: A Review	International Webinar on “Research Methodology in Environmental Sciences” <b>Feb 2024</b>  ISBN: 978-93-90028-80-1  <b>P No: 40-44</b>
<b>7</b>	Dr.K.Sreelatha	Physics & Electronics	Exploring Eco Methods: Unveiling Modern Research Strategies in Environmental Science	Published by: YVNR GDC, Kaikalur & Roshan Publishers- Visakhapatnam <b>Feb 2024</b>  ISBN: 978-93-90028-80-1  <b>P No: 56-59</b>
<b>8</b>	Dr.K.Sreelatha	Physics & Electronics	Research on Environmental Education	Published by: YVNR GDC, Kaikalur & Roshan Publishers- Visakhapatnam  <b>Feb 2024</b>  ISBN: 978-93-90028-80-1  <b>P No: 200 - 207</b>
<b>9</b>	Dr.K.Sreelatha	Physics & Electronics	Validated Spectrophotometric Determination of Ketorolac Tromethamime in Pharmaceutical Formulations	Proceedings of ICCBAD 24 – Two day International Conference on Chemical & Biochemical Approaches for Development of Drug Targets against Modern Diseases <b>Feb 2024</b>  ISBN: 978-93-340-2528-6  <b>Pg No: 306 – 315</b>

We thank God Almighty for his abundant blessings throughout the last semester. We are grateful to Dr. Sr.Mercy P., Principal for her constant support and guidance for the smooth conduct of the events during this academic year.

We owe our gratitude to Dr.Mrs.A.Nirmala Jyothsna ,H.O.D of Physics & Electronics for her affectionate guidance, support and encouragement throughout the year.

N. Madhuri Rose

(Secretary)

