

SCHOOL OF SCIENCE AND HUMANITIES

DEPARTMENT OF PHYSICS

Academic Year – 2023 – 2024

1.3.3 Number of value-added courses for imparting transferable and life skills offered during the year

S. No	Name of the value-added courses (with 30 or more contact hour) offered	Course code	Year of offering	No. of times offered during the same year	Duration of course	No. of students enrolled in the year	No. of students completing the course in the year
1	Computer web applications and graphics lab	-	2023	once	30 Hrs	42	42
2	Radiology and Safety	-	2023	Once	30 Hrs	36	36



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
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SCHOOL OF SCIENCE AND HUMANITIES
DEPARTMENT OF PHYSICS

offers a Value Added Course
on

COMPUTER WEB APPLICATION AND GRAPHICS LAB

03.04.2023 – 28.04.2023
(30 hours)

Course highlights

Web based applications

Computer graphics

Graphic primitives

2D transformation

3D viewing

Time: 3:30-5:00 P.M.

Venue: Department of Physics

Course coordinator names

- Dr. S. Ravichandran
- Dr. P. Malliga
- Dr. M. Manjula
- Dr. K. Parasuraman
- Dr. S. Anandhi

Click here to Register :

<https://forms.gle/HFexATVjiN4onCbq37>



**Certificates will be
provided to all active
participants**



CHIEF PATRONS

- Dr. Mariazeena Johnson, Chancellor
- Dr. Marie Johnson, President
- Ms. Maria Bernadette Tamilarasi, Vice President
- Mr. J. Arul Selvan, Vice President
- Ms. Maria Catherine Jayapriya, Vice President

PATRONS

- Dr. T Sasipraba, Vice Chancellor

ORGANIZERS

- Dr. Rekha Chakravarthi, Dean, School of Science & Humanities
- Dr. S. Ravichandran, HOD Physics



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List of Participants

S. No.	Name	Class	S. No.	Name	Class
1.	ANANDHI S	III B.Sc., Physics	24.	JOTHIKA R	II M.Sc., Physics
2.	GOMATHI D	II B.Sc., Physics	25.	KEERTHANA S N	II M.Sc., Physics
3.	HARIS KUMAR N	III B.Sc., Physics	26.	KIRTHIKA M	II M.Sc., Physics
4.	BELLAM HARSH	III B.Sc., Physics	27.	MARIA INFANT M	II M.Sc., Physics
5.	MADHAVI P	III B.Sc., Physics	28.	MARY SHAMALA V	II M.Sc., Physics
6.	MANOJ R	III B.Sc., Physics	29.	PADMA PRIYA B	II M.Sc., Physics
7.	PANDIMEENA S	III B.Sc., Physics	30.	PRATHYUSHA S Y	II M.Sc., Physics
8.	PREMALATHA N	III B.Sc., Physics	31.	SANGEETHA V	II M.Sc., Physics
9.	SAMINA S	III B.Sc., Physics	32.	SASHMITHAN A	II M.Sc., Physics
10.	SANJAY S	III B.Sc., Physics	33.	SHALINI T	II M.Sc., Physics
11.	SETH SORENG	III B.Sc., Physics	34.	SUBRAMANIAN S M	II M.Sc., Physics
12.	SHARMILA A	III B.Sc., Physics	35.	SUDHAKAR S	II M.Sc., Physics
13.	SRIVANI V	III B.Sc., Physics	36.	TAMILSELVAN J	II M.Sc., Physics
14.	SWATHI BALASUBRAMANIAM	III B.Sc., Physics	37.	THARANI M	II M.Sc., Physics
15.	TAMILARASI K	III B.Sc., Physics	38.	VARALAKSHMI VASUDHA	II M.Sc., Physics
16.	VIJAYAN B	III B.Sc., Physics	39.	VISHAL R G	II M.Sc., Physics
17.	ANURADHA SHARMA	II M.Sc., Physics	40.	YAZHINI J K	II M.Sc., Physics
18.	ARCHANA K L	II M.Sc., Physics	41.	YOGESHWARAN A	II M.Sc., Physics
19.	BHUVANESHUWARI B	II M.Sc., Physics	42.	YUKESH M	II M.Sc., Physics
20.	DIVYABHARATHI S	II M.Sc., Physics			
21.	DURGADEVI G	II M.Sc., Physics			
22.	HEMAMALINI P	II M.Sc., Physics			
23.	IMMANUEL WESLY U	II M.Sc., Physics			



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Schedule of the classes along with topics taken by the staff

Students Attended: **III B.Sc., II M.Sc.,**

No. of students attended: **42**

Mode of class: **Physical Mode**

Time of classes taken: 3:30-4:30 PM

S. No.	Name of the staff	Topics Covered	Date	Duration
1	Dr.S. Ravichandran	Web based applications	03-04-2023 to 04-04-2023	3 hrs
2	Dr.S. Anandhi	Web based applications	05-04-2023 to 06-04-2023	3 hrs
3	Dr. P.Malliga	Introduction to Computer Graphics	07-04-2023 to 10-04-2023	3 hrs
4	Dr.M.Manjula	Introduction to Computer Graphics	11-04-2023 to 12-04-2023	3 hrs
5	Dr. K. Parasuraman	Graphics Primitives	13-04-2023 to 14-04-2023	3 hrs
6	Dr. Ravichandran	Graphics Primitives	17-04-2023 to 18-04-2023	3 hrs
7	Dr. K. Parasuraman	2D transformation and viewing	19-04-2023 to 20-04-2023	3 hrs
8	Dr.P.Malliga	2D transformation and viewing	21-04-2023 to 24-04-2023	3 hrs
9	Dr.M.Manjula	3D transformation and viewing	25-04-2023 to 26-04-2023	3 hrs
10	Dr. Anandhi	3D transformation and viewing	27-04-2023 to 28-04-2023	3 hrs
			Total no. of hours taken	30 hrs



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SYLLABUS OF VALUE ADDED PROGRAM

S.No.	Topic covered	Syllabus	Duration
1	Web based applications	Introduction to the Internet and World Wide Web, Fundamentals of Hyper Text Markup Language (HTML), Cascading Style Sheets (CSS)	3 hrs
2	Web based applications	Client-side programming using JavaScript, Fundamentals of Extensible Markup Language (XML).	3 hrs
3	Introduction to Computer Graphics	Basic of Computer Graphics, Applications of computer graphics, Display devices	3 hrs
4	Introduction to Computer Graphics	Random and Raster scan systems, Graphics input devices, Graphics software and standards.	3 hrs
5	Graphics Primitives	Points, lines, circles and ellipses as primitives, scan conversion algorithms for primitives, Fill area primitives including scan-line polygon filling	3 hrs
6	Graphics Primitives	inside-outside test, boundary and flood-fill, character generation, line attributes, area-fill attributes, character attributers	3 hrs
7	2D transformation and viewing	Transformations (translation, rotation, scaling), matrix representation, homogeneous coordinates, composite transformations, reflection and shearing, viewing pipeline and coordinates system	3 hrs
8	2D transformation and viewing	window-to-viewport transformation, clipping including point clipping, line clipping (cohen-sutherland, liang- bersky, NLN), polygon clipping	3 hrs
9	3D transformation and viewing	3D scaling, rotation and translation, composite transformation, viewing pipeline and coordinates, parallel and perspective transformation	3 hrs
10	3D transformation and viewing	view volume and general (parallel and perspective) projection transformations	3 hrs



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offers a Value Added Course
on

RADIOLOGY AND SAFETY

01.09.2023 – 28.09.2023
(30 hours)

Course highlights

Web based applications

Computer graphics

Graphic primitives

2D transformation

3D viewing

Time: 3:30-5:00 P.M.

Venue: Department of Physics

Course coordinator names

- Dr. K. Parasuraman
- Dr. S. Anandhi
- Dr. M. Dakshana
- Dr. S. Sridharan
- Dr. E.S. Sowbakkiyavathi

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List of Participants

S. No.	Name	Class
1.	AKALYA C	II B.Sc., Physics
2.	DHRUV KUMAR SINGH	II B.Sc., Physics
3.	SAINITHA S	II B.Sc., Physics
4.	SANJAY C	II B.Sc., Physics
5.	SHANMUGAPRIYA M	II B.Sc., Physics
6.	YUKTHA MUKI J D	II B.Sc., Physics
7.	ANANDHI S	III B.Sc., Physics
8.	GOMATHI D	III B.Sc., Physics
9.	HARIS KUMAR N	III B.Sc., Physics
10.	BELLAM HARSH	III B.Sc., Physics
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19.	SRIVANI V	III B.Sc., Physics
20.	SWATHI BALASUBRAMANIAM	III B.Sc., Physics
21.	TAMILARASI K	III B.Sc., Physics
22.	VIJAYAN B	III B.Sc., Physics
23.	JAYAPRAVEEN S	I M.Sc., Physics
24.	JEMIMAH SHARON Y	I M.Sc., Physics
25.	JENIFER V	I M.Sc., Physics
26.	S. PAVITHRA	I M.Sc., Physics
27.	BALAMURALI S	I M.Sc., Physics
28.	JERIT G JASNI	I M.Sc., Physics
29.	YUVASREEJA. R	I M.Sc., Physics
30.	JENNY ADLINE MANCY. A	I M.Sc., Physics
31.	GOWRI SHANKARI. T	I M.Sc., Physics



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32.	NILAVU. S	I M.Sc., Physics
33.	KRISHNA PRIYA S	I M.Sc., Physics
34.	JACKSON DANIEL R	I M.Sc., Physics
35.	BHARATHVAJ V	I M.Sc., Physics
36.	ARUL ABISHAK. D	I M.Sc., Physics

Schedule of the classes along with topics taken by the staff

Students Attended: **II B.Sc, III B.Sc., I M.Sc**

No. of students attended: **36**

Mode of class: **Physical Mode**

Time of classes taken: 3:30-
4:30 PM

S. No.	Name of the staff	Topics Covered	Date	Duration
1	Dr. K. Parasuraman	Radiation Quantities and Units	01-09-2023 to 04-09-2023	3 hrs
2	Dr. S. Anandhi	Biological Effects of radiation	05-09-2023 to 06-09-2023	3 hrs
3	Dr. S. Sridharan	Radiation detection	07-09-2023 to 08-09-2023	3 hrs
4	Dr. M. Dakshana	Radiation Measurements	11-09-2023 to 12-09-2023	3 hrs
5	DR. E.S. Sowbakkiyavathi	Radiation Hazard evaluation	13-09-2023 to 14-09-2023	3 hrs
6	Dr. K. Parasuraman	Radiation control	15-09-2023 to 18-09-2023	3 hrs
7	Dr. S. Anandhi	Radiation protection	19-09-2023 to 20-09-2023	3 hrs
8	Dr. S. Sridharan	Occupational Exposure Guidelines	21-09-2023 to 22-09-2023	3 hrs
9	Dr. M. Dakshana	Regulatory Requirements	25-09-2023 to 26-09-2023	3 hrs
10	DR. E.S. Sowbakkiyavathi	Radiation Responsibilities	27-09-2023 to 28-09-2023	3 hrs
			Total no. of hours taken	30 hrs



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SYLLABUS OF VALUE ADDED PROGRAM

S. No.	Topic covered	Syllabus	Duration
1	Radiation Quantities and Units:	Radiation- Radioactivity- Sources of radiation - natural radioactive sources - cosmic rays-terrestrial radiation - man made radiation sources. Units of radiation Exposure- Activityconcentration - Absorbed dose- Equivalent Dose Weighting Factors-Effective Dose - Occupational Exposure Limits -Dose limits to public.	3 hrs
2	Biological Effects of radiation	Ionization, excitation and free radical formation, hydrolysis of water, action of radiation on cell -Chromosomal aberration and its application for the biological dosimetry- Effects of whole body and acute irradiation, dose fractionation, effects of ionizing radiation on each of major organ system including fetus.	3 hrs
3	Radiation detection	Radiation detection: Ionization of gases- Fluorescence and Phosphorescence -Effects on photographic emulsion. Ionization Chambers – proportional counters- G.M counters-scintillation detectors – liquid semiconductor detectors –	3 hrs
4	Radiation Measurements	Gamma ray spectrometer. and Measurements: secondary standard dosimeters – film dosimeter – chemical dosimeter - Thermoluminescent Dosimeter - Pocket Dosimeter-Radiation survey meter- wide range survey meter -zone monitor- contamination monitor -their principle-function and uses.	3 hrs
5	Radiation Hazard evaluation	Philosophy of Radiation protection, effects of time, Distance & Shielding. Calculation of Work load, weekly calculated dose to radiation worker & General public good work practice in Diagnostic Radiology.	3 hrs
6	Radiation control	Planning consideration for radiology, including Use factor, occupancy factors, and different shielding material.	3 hrs
7	Radiation protection	Radiation protection of self and patient- Principles of radiation protection, time - distance and shielding, shielding -calculation and radiation survey – ALARA personnel dosimeters (TLD and film batches)	3 hrs
8	Occupational Exposure Guidelines	occupational exposure - ICRP, NRPB, NCRP and WHO guidelines for radiation protection, pregnancy and radiation protection. Guidance level for patient's dose reduction in radio-diagnosis.	3 hrs
9	Regulatory Requirements	International Commission on Radiation Protection (ICRP) / National Regulatory body (AERB - Atomic Energy Regulatory Board).	3 hrs
10	Radiation Responsibilities	Responsibilities, organization, Safety Standard, Codes and Guides, Responsibilities of licenses, registrants & employers and Enforcement of Regulatory requirements.	3 hrs



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