



THUNCHAN MEMORIAL GOVT. COLLEGE, TIRUR

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> Criterion 1 Curricular Aspects



Add on Courses Department of Physics 2019-20

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DEPARTMENT OF PHYSICS

T M GOVT COLLEGE, TIRUR

ADD ON COURSE 2019-20

Add on course on Energy Harvesting from Renewable Energy Sources

Add on course on Introduction to Scintific Computing

Add on Course on Material Characterization Techniques

Prospectus and Syllabus of

Add on Course in

ENERGY HARVESTING FROM RENEWABLE RESOURCES

for

First year BSc Physics



Thunchan Memorial Govt. College, Tirur

Vakkad PO, Malappuram

THUNCHAN MEMORIAL GOVT. COLLEGE, TIRUR DEPARTMENT OF PHYSICS

ADD ON COURSE (TMGCPHY AC2)

ENERGY HARVESTING FROM RENEWABLE RESOURCES

Course objectives:

To provide an overview of the important renewable energy resources and harnessing technologies. Nowadays the energy requirement of the society is high but the conventional sources of energy is not enough for it. So this course is intended for first year BSc Physics students to understand the importance of non-conventional energy sources.

: 30 Hours Duration of the course : 4 **Total Credits**

TOTAL HOURS :30

TOTAL MODULES: 4

MODULE 1 (8 HOURS)

Solar constants, Solar radiation measurements, solar energy collector, Physical principle of the conversion of solar radiation into heat, solar cookers, solar distillation, solar furnaces, solar greenhouses, solar electric power generation

MODULE 2 (6 hours)

Basic principle of wind energy conversion, basic components of wind energy conversion system, wind energy collectors. application of wind energy.

MODULE 3 (8 hours)

Geothermal sources, advantages and disadvantages of geothermal energy over other energy forms, application of geothermal energy. Biomass energy, Method of obtaining energy from biomass.



THUNCHAN MEMORIAL GOVT. COLLEGE, TIRUR DEPARTMENT OF PHYSICS

ADD ON COURSE (TMGCPHY AC2)

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Duration of the course : 30 Hours Total Credits : 4

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MODULE 3 (8 hours)

Geothermal sources, advantages and disadvantages of geothermal energy over other energy forms, application of geothermal energy. Biomass energy, Method of obtaining energy from biomass.



MODULE 4 (8 hours)

Ocean thermal electric conversion. Energy from tides, Basic principle of tidal power.advantages and limitations of tidal power generation. advantages and disadvantages of wave energy wave energy conversion devices.Advantages of battery for bulk energy storage

References:

1. Non- Conventional Energy Sources and Utilisation by R.K.Rajput, S.Chand Publishers

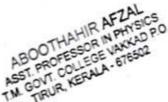
References

 Non-Conventional Energy Resources by G. D. Rai, Khanna Publishers, 2008.
 Solar Energy Fundamentals and application by H.P. Garg and J. Prakash, Tata McGraw- Hill Publishing company Ltd. 1997.

 Solar Energy by S. P. Sukhatme, Tata McGraw- Hill Publishing company Itd, 1997.









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THUNCHAN MEMORIAL GOVT. COLLEGE TIRUR DEPARTMENT OF PHYSICS

ENERGY HARVESTING FROM RENEWABLE RESOURCES

REPORT

Department of Physics of Thunchan Memorial Govt. College Tirur conducted an Add-on course "Energy harvesting from Renewable Resources" with 30 hours duration in the academic year 2019-2020. Thirty five students were enrolled in the course. .Mrs. SOUMYA C was appointed as Course Coordinator.All the 35 students completed the course successfully.

T.M. GOVT. C E VAKKAD P.O. Head of the department KERALA - 678502

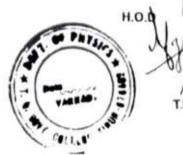


T M GOVT COLLEGE TIRUR DEPARTMENT OF PHYSICS ENERGY HARVESTING FROM RENEWABLE RESOURCES(TMGCPHY AC2)

MARK LIST OF STUDENTS COMPLETED THE COURSE(2019-2020)

LNO	NAME	MARKS/ GRADE
1	AB10.01117	٨
2	ADARSILA	Α.
3	ANAT MATHEW	A
4	DALWIN ALDO DAISON	A
5	GOKULK P	B
6	MIDHUN T	A
7	MULTIAR A	A
8	MORAMED SIBILLEP	В
9	SCOHAMMED MIDULAUR	A
10	(JOHAMMED SALIMINIK	B
11	MUHAMED MARSHAD	A
12	MUHAMMED ANAS K	A
13	MUHAMMED SAFWAN	A
14	NIBIL MUHAMMED N V	A
15	SHIBINLAL K K	A
16	SHIJIL K T	A
17	ADITHYA P V	A
18	AJMAL M P	A
19	AMRUTHA HARIDAS	A
20	ANARGHA C P	A
21	ANJITHA PRABHAKARAN E K	A
22	BHAVANA C	A
23	DEVIKA A V	A
24	GADHA C	A
25	JINEESA P P	A
26	KEERTHANA V	В
27	LIBA MARIYAM K	A
28	MOHAMMED AMEEN V V	A
29	NAJIYA NAZRIN V	A
30	NANDANA M	A
31	NUBAINA V V	A
32	SHAFNA ALPARAMBIL	A
	SHONIMAA	A
34	SREELAKSHMEV P	
25	VINAYAK I	A

COURSE COORDINATOR



ABOOTHAH TR AFZAL ASST PROFESSOR IN PHYSICS TM. GOVT COLLEGE VAKEAD POL TIRUR, KERALA - 676592

T M GOVT COLLEGE TIRUR DEPARTMENT OF PHYSICS

ENERGY HARVESTING FROM RENEWABLE RESOURCES(TMGCPHY AC2) LIST OF STUDENTS COMPLETED THE COURSE(2019-2020)

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32	SHAFNA ALPARAMBIL	COMPLETED
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	VINAYAK P	COMPLETED

COURSE COORDINATOR

HOD PHYSICS . ABOOTHAHIR AFZAL SST. PROFESSOR IN PHYSICS M. GOVT. COLLEGE VAKKAD P.O. TIRUR, KERALA - 676502 PLLCAS

T M GOVT COLLEGE TIRUR DEPARTMENT OF PHYSICS ENERGY HARVESTING FROM RENEWABLE RESOURCES LIST OF STUDENTS ENROLLED (2019-2020)

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1	9164	ABHIJITH C	I BSc PHYSICS
2	9373	ADARSH A	I BSc PHYSICS
3	9162	ANAT MATHEW	I BSc PHYSICS
4	9124	DALWIN ALDO DAISON	I BSc PHYSICS
5	9100	GOKUL K P	I BSc PHYSICS
6	9027	MIDHUN T	I BSc PHYSICS
7	9369	MISHAB A	I BSc PHYSICS
8	9208	MOHAMED SIBILI P P	I BSc PHYSICS
9	9302	MOHAMMED MIDULAJ K	I BSc PHYSICS
10	9215	MOHAMMED SALIM N K	I BSc PHYSICS
11	9297	MUHAMED MARSHAD	I BSc PHYSICS
12	9128	MUHAMMED ANAS K	I BSc PHYSICS
13	9279	MUHAMMED SAFWAN	I BSc PHYSICS
14	9312	NIBIL MUHAMMED N V	I BSc PHYSICS
15	5 9319	SHIBINLAL K K	I BSc PHYSICS
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17	7 9324	ADITHYA P V	I BSc PHYSICS
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19	9 9115	AMRUTHA HARIDAS	I BSc PHYSICS
20	9147	ANARGHA C P	I BSc PHYSICS
2	1 9140	ANJITHA PRABHAKARAN E K	I BSc PHYSICS
22	2 9256	BHAVANA C	I BSc PHYSICS
23	3 9139	DEVIKA A V	I BSc PHYSICS
24	4 9260	GADHA C	I BSc PHYSICS
2	5 9141	JINEESA P P	I BSc PHYSICS
2	6 9285	KEERTHANA V	I BSc PHYSICS
2	7 9199	LIBA MARIYAM K	I BSc PHYSICS
2	8 9361	MOHAMMED AMEEN V V	I BSc PHYSICS
2	9 9323	NAJIYA NAZRIN V	I BSc PHYSICS
3	0 9364	NANDANA M	I BSc PHYSICS
3	1 9349	NUBAINA V V	I BSc PHYSICS
3.	2 9259	SHAFNA ALPARAMBIL	I BSc PHYSICS
3	3 9316	SHONIMA A	I BSc PHYSICS
3	4 9181	SREELAKSHMI V P	I BSc PHYSICS
3	5 9095	VINAYAK P	I BSc PHYSICS

COURSE COORDINATOR



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THUNCHAN MEMORIAL GOVERNMENT COLLEGE, TIRUR

VAKKAD PO, MALAPPURAM DT, KERALA ST, INDIA, PIN: 676 502 Email:tmgctirur@gmail.com, Website:www.tmgctirur.ac.in



It is certified by duly appointed examiners that

ABHIJITH C 9164, First BSc Physics has qualified

Energy harvesting from renewable resources

offered by the

the Department of Physics

He / She has been placed in A Grade for the examination held in

March 2020

Given under the Seal of the College.

College Seal

Tirur: 31/03/2020

Head of the Department

Open

Principal



Syllabus of Add-on Course in

Characterization Techniques in Materials Science

for

Third year BSc Physics



Thunchan Memorial Govt. College, Tirur

Vakkad PO, Malappuram



T M GOVT COLLEGE TIRUR DEPARTMENT OF PHYSICS

ADD-ON COURSE ON CHARACTERIZATION TECHNIQUES IN MATERIALS SCIENCE

Course aims

By the end of the course students will be expected to:

- The objective of the course is to provide a broad overview about different techniques available for structural characterization of various materials systems.
- Familiarise the imaging of the microstructure by various microscopy
- Their importance in materials research and application to real problem will be emphasised
- Crystal Structures, Mechanical Properties of Metals, Nano materials, dielectric materials

D the of the course	: 30 Hours
Duration of the course	: 4
Total Credits	. 4

SYLLABUS

Unit 1

What is material science, Classification of materials-metals, ceramics, polymers, composites,

Advanced materials, smart materials.

Unit 2

Structural characterization Techniques

XRD, Single crystal and powder diffraction techniques with diffractometer, Laue's technique and rotating crystal method 13 Hrs

Unit 3

Microscopic techniques



3 Hrs

9 Hrs

Optical microscopy, Basic concepts of electron microscopy, electron gun, electromagnetic tens, Resolution, Transmission electron microscopy, scanning electron microscopy, Scanning probe microscopy

Unit 4

Spectroscopic Techniques

5 Hrs

UV-Visible Spectroscopy, PL Spectroscopy, FTIR Spectroscopy

Book for study

1.Encyclopedia of Materials Characterization- Surfaces, Interfaces, Thin Films by C. Richard Brundle, Charles A Evans Jr., Shaun Wilson

Book for reference

1. Materials science and engineering- Vth Edn- V Raghavan(PHI)

 Material science by S.L.Kakani & Amit Kakani, 2nd edition 2010, reprint 2011

3. Material Science & Engineering, R.K. Rajput (Jain Book Agency)

4. Material Science and Engineering, I. P. Singh, & Subhash Chander (Jain

Book Agency)

 Christopher Toumey, Reading Feynman Into Nanotechnology: A Text for a New Science, Techné 12:3 Fall 2008.

6. Pulikel M. Ajayan, Nanocomposite Science and Technology, Wiley-VCH, 2005.

7. H. S. Nalwa (Ed.), "Encyclopedia of Nanoscience & Nanotechnology", American Scientific Publishers, California, 2004.



COLLEGE VAKKAD P.O. TIRUR, KERALA - 676502

THUNCHAN MEMORIAL GOVT. COLLEGE TIRUR DEPARTMENT OF PHYSICS ADD ON COURSE ON CHARACTERIZATION TECHNIQUES IN MATERIAL SCIENCE MARK LIST OF STUDENTS COMPLETED THE COURSE(2019-2020)

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	TMARSPHE01	HARSHITHA K K	A
	TMARSPH005	MINSHAD P P	A
	1MARSPH00	MOHAMMED JASIR N	A
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	TMARSPH00;	MUHSINA K K	A
	TMARSPH008	SHADIYA N V	A
	TMARSPH009	ABI FELIX B S	A
	1MARSPH010	AMEEKHA HUSSAIN	A
11	TMARSPH011	ANUPAMA K V	A
12	TMARSPH012	AYISHA YASMIN K T	A
13	TMARSPH013	BASIRA NASRI V K	A
14	TMARSPH014	DHANUSREE M K	A
15	TMARSPH015	MANU M SREENIVAS	A
16	TMARSPH016	REHNA K	A
17	TMARSPH017	SARANYA K V	A
18	3 TMARSPH018	SAYANA K	А
19	TMARSPH019	SINDHOORA P	A
20	TMARSPH020	ABHIRAM M	A
21	TMARSPH021	ΑΦΙΤΗΥΑ Μ V	A
22	2 TMARSPH022	AHALYA P	A
23	3 TMARSPH023	AJAY C K	A
24	4 TMARSPH024	ANSILA P N	В
25	5 TMARSPH025	ANUPAMA M	A
26	6 TMARSPH026	ARUN T K	А
2	7 TMARSPH030	GOPIKA M P	A



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COURSE COORDINATOR

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ABOOTHAHIR AFZAL ASST. PROFESSOR IN PHYSICS TM. GOVT. COLLEGE VAKKAD P.O. TIRUR, KERALA - 676502

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T.M. GOVI. COLLEGE TIRUR DEPARTMENT OF PHYSICS

ADD ON COURSE ON CHARACTERIZATION TECHNIQUES IN MATERIAL SCIENCE

REPORT

Department of Physics of Thunchan Memorial Govt. College Tirur conducted an add-on course on Characterization Techniques in Materials Science' with 00 hours duration in the activitie year 2019-20. Forty Two students were enrolled in the course. Smt.Soumyal C was appointed as Course Coordinator. All the 42 students completed the course successfully.

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THUNCHAN MEMORIAL GOVT. COLLEGE TIRUR DEPARTMENT OF PHYSICS ADD ON COURSE ON CHARACTERIZATION TECHNIQUES IN MATERIAL SCIENCE LIST OF STUDENTS ENROLLLED IN THE COURSE(2019-2020)

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	TMARSPH005	MOHAMMED JASIR N	III BSc PHYSICS
	TMARSPH006	MOHAMMED SHAMNAD K M	III BSc PHYSICS
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	TMARSPH009	ABI FELIX B S	III BSc PHYSICS
	TMARSPH010	AMEEKHA HUSSAIN	III BSc PHYSICS
- 1	TMARSPH011	ANUPAMA K V	III BSc PHYSICS
	TMARSPH012	AYISHA YASMIN K T	III BSc PHYSICS
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	TMARSPH016	REHNA K	III BSc PHYSICS
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34	TMARSPH037	RANJUSHA K	III BSc PHYSICS
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40	TMARSPH044	ASWATHY N K	III BSc PHYSICS
41	TMARSPH043	ARDRA RAMAKRISHNAN	III BSc PHYSICS
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THUNCHAN MEMORIAL GOVT. COLLEGE TIRUR DEPARTMENT OF PHYSICS

ADD ON COURSE ON CHARACTERIZATION TECHNIQUES IN MATERIAL SCIENCE LIST OF STUDENTS COMPLETED THE COURSE(2019-2020)

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1	TMARSPH001	AMINA	COMPLETED
2	TMARSPH002	FAHMIDA SHIRIL V P	COMPLETED
3	TMARSPH003	HARSHITHA K K	COMPLETED
4	TMARSPH004	MINSHAD P P	COMPLETED
5	TMARSPH005	MOHAMMED JASIR N	COMPLETED
6	TMARSPH006	MOHAMMED SHAMNAD K M	COMPLETED
7	TMARSPH007	MUHSINA K K	COMPLETED
8	TMARSPH008	SHADIYA N V	COMPLETED
9	TMARSPH009	ABI FELIX B S	COMPLETED
10	TMARSPH010	AMEEKHA HUSSAIN	COMPLETED
11	TMARSPH011	ANUPAMA K V	COMPLETED
12	TMARSPH012	AYISHA YASMIN K T	COMPLETED
13	TMARSPH013	BASIRA NASRI V K	COMPLETED
14	TMARSPH014	DHANUSREE M K	COMPLETED
15	TMARSPH015	MANU M SREENIVAS	COMPLETED
16	TMARSPH016	REHNA K	COMPLETED
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39	TMARSPH042	NAJAH K T	COMPLETED
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COURSE COORDINATOR





THUNCHAN MEMORIAL GOVERNMENT COLLEGE, TIRUR

VAKKAD PO, MALAPPURAM DT, KERALA ST, INDIA, PIN: 676 502 Email:tmgctirur@gmail.com, Website:www.tmgctirur.ac.in



It is certified by duly appointed examiners that

AYISHA YASMIN K T 8494, Third BSc Physics has qualified

Characterization Techniques in Material Science

offered by the the Department of Physics He / She has been placed in A Grade for the examination held in

March 2020

Given under the Seal of the College.

OfCollege Sea

THE 31/03/2020

Head of the Department

Principal

THUNCHAN MEMORIAL GOVT. COLLEGE TIRUR DEPARTMENT OF PHYSICS

Introduction to Scientific Computing

REPORT

Department of Computer Science and Physics of Thunchan Memorial Govt. College Tirur conducted an Add-on course "Introduction to Scientific Computing" with 30 hours duration in the academic year 2019-2020. Thirty six students were enrolled in the course. .Mrs. Jayasree . K was appointed as Course Coordinator. All the 36 students completed the course successfully.

Co-ordinator Jayasree. Le

Head of the department

ABOOTHAHIR AFZAL ASST. PROFESSOR IN PHYSICS T.M. GOVT COLLEGE VAKKAD P.O. TIRUR, KERALA - 676502

THUNCHAN MEMORIAL GOVT. COLLEGE TIRUR DEPARTMENT OF PHYSICS ADD-ON COURSE ON INTRODUCTION TO SCIENTIFIC COMPUTING ENROLLED LIST OF STUDENTS (2019-2020)

L.NO	REG.NO	NAME	CLASS
1	TMASSPH001	HUSNA SHIREEN P K	II BSc PHYSICS
2	TMASSPH002	JAFSINA A P	II BSc PHYSICS
3	TMASSPH003	MUFEEDA K	II BSc PHYSICS
4	TMASSPH004	SHABEEBA THASNI M	II BSc PHYSICS
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6	TMASSPH006	ASHIQU AMEEN C H	II BSc PHYSICS
7	TMASSPH007	SAJEEL P	II BSc PHYSICS
8	TMASSPH008	SIRAJUDHEEN U	II BSc PHYSICS
9	TMASSPH009	C S JAYALAKSHMI	II BSc PHYSICS
10	TMASSPH010	KRISHNAPRIYA K	II BSc PHYSICS
11	TMASSPH011	SARANYA K	II BSc PHYSICS
12	TMASSPH012	AMEENU RAHMAN K	II BSc PHYSICS
13	TMASSPH013	KIRAN M R	II BSc PHYSICS
14	TMASSPH014	SHIBIN K	II BSc PHYSICS
15	TMASSPH015	AFSEENA P	II BSc PHYSICS
16	TMASSPH016	ANJANA E	II BSc PHYSICS
17	TMASSPH017	ARYA K P	II BSc PHYSICS
18	TMASSPH018	ATHULYA O	II BSc PHYSICS
19	TMASSPH019	ATHULYA RAMESH	II BSc PHYSICS
20	TMASSPH020	DRISYA DAS V	II BSc PHYSICS
21	TMASSPH021	JASNA THASNI K P	II BSc PHYSICS
22	TMASSPH022	JYOTHIKA C T	II BSc PHYSICS
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25	TMASSPH025	SAMEERA BANU V P	II BSc PHYSICS
26	TMASSPH026	SHILPA M P	II BSc PHYSICS
27	TMASSPH027	SRUTHI P	II BSc PHYSICS
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29	TMASSPH029	ATHUL V P	II BSc PHYSICS
-	TMASSPH030	MUHAMMED ANEES K	II BSc PHYSICS
	TMASSPH031	NIDHIN N P	II BSc PHYSICS
	TMASSPH032	NIHAL MOHAMMED K	II BSc PHYSICS
	TMASSPH033	SANAL M N	II BSc PHYSICS

34	TMASSPH034	SIDHARTH K V	II BSc PHYSICS
	TMASSPH035	VISHNU K P	II BSc PHYSICS
	TMASSPH036	RISANA THASNI	II BSc PHYSICS

COURSE COORDINATOR Jayanee. le.

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ABOOTHAHIR AFZAL ASST. PROFESSOR IN PHYSICS T.M. GOVT. COLLEGE VAKKAD P.O. TIRUR, KERALA - 676502 Prospectus and Syllabus of

Add on Course in

Introduction to Scientific Computing

for

Second year BSc Physics



Thunchan Memorial Govt. College, Tirur

Vakkad PO, Malappuram

THUNCHAN MEMORIAL GOVT. COLLEGE TIRUR DEPARTMENT OF PHYSICS

Introduction to Scientific Computing

Prerequisites & Objectives

Prerequisites

The students should have studied any basic computer language as a prerequisite for the course

Course Objectives

This course is intended for Second year BSc Physics students. In this course students are introduced to use Python as a tool to solve Physics problems. The emphasis is to learn using a high level programming language without actually going through the logic behind the equations that are to be coded. A minimal understanding of the basic mathematics is assumed. This develops familiarity and equips them to code a large number of physics problems and learn how to obtain results and plots using the software

Duration of the course	: 30 Hours
Total Credits	: 5

Unit 1

introduction to Python Programming

Features of Python, History of Python Programming Language, Companison between C and Python, Thrust areas of Python in Physics, Writing and execution of Python programs. Integrated Development Environments, installation and use of python distributions

Unit 2

Fundamental programming with Python:

Designing a Program, identifiers, keywords, operators, and expressions. Arithmetic, Logical and Assignment operators, Precedence, Data types: Basic data types: Strings and numbers, displaying an output, type conversion, basic string operations & methods, format specifiers

Unit 3

Control structures

Decision Structures: if. If ---else, ifelif.....else, nested if decision flow statements. Repetition Structures: condition controlled: while loop. Count controlled: for loop. sentinels, continue and break statements, try and except statements

Unit 4

Functions & Files

Built in function, modules, void function, flow charting, hierarchy charts, Local variables and scope, passing an argument function, value returning functions, Random number

8 Hrs

7 Hrs

5 Hrs

5 Hrs

eration es: introduction to file input and output

Unit 5

Scientific computing packages

5 Hrs

Numpy: -Array object, creating array, matrix, indexing, slicing, resizing, reshaping, arithmetic operations, functions, matrices and vector operations Matplotlib: basic plotting, Scipy: Linear algebra operations, equation solving.

Text Books & References

Text Books

Mark Lutz, "Learning Python" O'Reilly Media, 2013

Core Python Programming -Dr Nageswara Rao, 2017, Dreamtech Press

Introduction to Computing and problem solving using Python -E Balagruswamy

References

- 1. Robert Johansson, "Numerical Python: Scientific Computing and Data Science Applications with Numpy, SciPy and Matplotlib" Apress, 2019.
- Rubin H. Landu, Manuel J. Paez, and Cristian C.Bordeianu, "Computational Physics Problem solving with Python" – Third Edition, Wiley VCH, 2015.

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THUNCHAN MEMORIAL GOVT. COLLEGE TIRUR DEPARTMENT OF PHYSICS

ADD ON COURSE ON INTRODUCTION TO SCIENTIFIC COMPUTING MARK LIST OF STUDENTS COMPLETED THE COURSE(2019-20)

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3	TMASSPH003	MUFEEDA K	A
4	TMASSPH004	SHABEEBA THASNI M	A
5	TMASSPH005	AFSAL RAFEEQ C	A
6	TMASSPH006	ASHIQU AMEEN C H	A
7	TMASSPH007	SAJEEL P	A
8	TMASSPHOOR	SIRAJUDHEEN U	A
9	TMASSPH009	C S JAYALAKSHMI	A
10	TMASSPH010	KRISHNAPRIYA K	A
11	TMASSPH011	SARANYAK	A
12	TMASSPH012	AMEENU RAHMAN K	A
13	TMASSPH013	KIRAN M R	A
14	TMASSPH014	SHIBIN K	A
15	TMASSPH015	AFSEENA P	A
16	TMASSPH016	ANJANA E	A
17	TMASSPH017	ARYA K P	В
18	TMASSPH018	ATHULYA O	A
19	TMASSPH019	ATHULYA RAMESH	A
20	TMASSPH020	DRISYA DAS V	A
21	TMASSPH021	JASNA THASNI K P	B
22	TMASSPH022	ΙΥΟΤΗΙΚΑ C Τ	A
23	TMASSPH023	MAHIMA T	B



24	TMASSPH024	NAYAN JYOTHI C	A
25	TMASSPH025	SAMEERA BANU V P	A
26	TMASSPH026	SHILPA M P	A
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28	TMASSPH028	АВНІЛТН К	A
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30	TMASSPH030	MUHAMMED ANEES K	A
31	TMASSPH031	NIDHIN N P	A
32	TMASSPH032	NIHAL MOHAMMED K	A
33	TMASSPH033	SANAL M N	В
34	TMASSPH034	SIDHARTH K V	A
3	5 TMASSPH035	VISHNU K P	В
3	6 TMASSPH036	RISANA THASNI	A

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ABOOTHAHIR AFZAL ASST. PROFESSOR IN PHYSICS T.M. GOVT. COLLEGE VAKKAD P.O. TIRUR, KERALA - 676502







COURSE COORDINATOR

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THUNCHAN MEMORIAL GOVT. COLLEGE TIRUR DEPARTMENT OF PHYSICS ADD-ON COURSE ON INTRODUCTION TO SCIENTIFIC COMPUTING LIST OF STUDENTS COMPLETED THE COURSE(2019-2020)

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It is certified by duly appointed examiners that

AFSAL RAFEEQ C 8731, First BSc Physics has qualified

Introduction to Scientific Computing

offered by the the Department of Physics He / She has been placed in A Grade for the examination held in March 2020

Given under the Seal of the College.

Tirur: 31/03/2020

Head of the Department

Principal