



25+ Years of Service

SRI SANKARA ARTS & SCIENCE COLLEGE Autonomus

A Unit of Sri Kanchi Kamakoti Peetam Charitable Trust
Affiliated to University of Madras
Accredited by NAAC with 'A' Grade

MINUTES OF MEETING OF THE BOARD OF STUDIES

Department: Department of Physics

Venue : Board Room

Date : 05-07-2017

Agenda : Approval of the Regulations and Syllabus for B.Sc., Physics course to take effect from 2018-2019.

The following members were present in the meeting:

1. Prof.C.Venkateswaran, Ph.D., Head of the Department, Department of Nuclear Physics, University of Madras, Guindy Campus, Chennai – 600 025 - External Subject Expert – University Nominee.
2. Dr.K. Ravichandran, Ph.D., Associate Professor, Department of Nuclear Physics, University of Madras, Guindy Campus, Chennai – 600 025 – External Subject Expert.
3. Dr.E.Manikandan, Ph.D., Assistant Professor, Department of Physics, Thiruvalluvar University College of Arts and Science, Thennangur Village, Vandavasi Taluk – 604 408 – External Subject Expert.
4. Dr.A.S.Vytheeswaran, Ph.D., Assistant Professor, Department of Theoretical Physics, University of Madras, Guindy Campus, Chennai – 600 025 – Special Invitee.

5. Dr.R.K.Balachandar, Ph.D., Assistant Professor & Head, Department of Physics, Sri Sankara Arts and Science College (Autonomous), Enathur, Kanchipuram – Chairman.
6. Mr.R.Arunkumar, M.Sc.,M.Phil., Assistant Professor, Department of Physics, Sri Sankara Arts and Science College (Autonomous), Enathur, Kanchipuram – Member.
7. Mr.V.Baskaran, M.Sc., B.Ed., Assistant Professor, Department.of Physics, Sri Sankara Arts and Science College (Autonomous), Enathur, Kanchipuram – Member.
8. Dr.P.Vivek, Ph.D., Assistant Professor, Department of Physics, Sri Sankara Arts and Science College (Autonomous), Enathur, Kanchipuram – Member
9. Prof.R.Rajathilagam, M.Sc.,M.Phil., Head of the Department, Department of Electronics, Mohammed Sathak Arts and Science College, Solinganallur, Chennai – 600 119 – Member- Meritorious Alumnus.
10. Mr.J. Chidambara Subramaniam, Director, e-Pagemaker (P) Ltd., Thiruvanmiyur, Chennai – 600 041 – Member - Representative from Industry
11. Dr.K.R.Venkatesan, Ph.D.,Principal, Sri Sankara Arts and Science College (Autonomous), Enathur, Kanchipuram – Special invitee

1. The Regulations and Syllabus Proposed for B.Sc., Physics course was discussed in the Board of Studies Meeting.
2. The Board of Studies unanimously approved the Proposed Regulations and Syllabus for B.Sc., Physics course with the incorporation of relevant Changes as suggested by the Board of Studies members.
3. The Suggestions, as recommended by the Members, Board of Studies is enclosed, as Annexure - 1.
4. A fresh copy of the Proposed Syllabus, after Carrying out relevant Changes, as suggested by the members, which has been unanimously approved is also enclosed as Annexure - 2.
5. The Board of Studies recommends the Regulations and Syllabus to the Academic council of the College, for the implementation to take effect from 2018-19.

Meeting of the Board of Studies of the Department of Physics held on
05th July 2017 at 10:00 a.m

Signature of members:

1. Prof.C.Venkateswaran

-  5/7/2017

2. Dr. K. Ravichandran

- Dr. K. Ravichandran 5.7.2017

3. Dr. E. Manikandan

-  5.7.2017

4. Dr. A.S. Vytheswaran

-  05-07-2017

5. Dr.R.K.Balachandar

- R.K. Balachandar

6. Mr. R. Arunkumar

- R. Arun

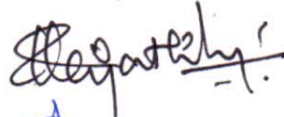
7. Mr.V.Baskaran

- 

8. Dr.P.Vivek

- 

9. Prof. R. Rajathilagam

- 

10. Mr. J. Chidambara Subramaniam

-  Subramaniam

11. Dr.K.R.Venkatesan

- 

Annexure – 1

Suggestions relevant to B.Sc., Physics syllabus - Semester wise:

FIRST SEMESTER

- “**Mechanics and Properties of Matter**” paper is offered as a core paper. The syllabus of this paper have to follow the University of Madras syllabus with inclusion such as
 - i) **Unit-1** add sub title as Classical mechanics and followed its contents (Generalised coordinates, configuration space , Lagrange's equation, Hamilton function and Hamilton's equations).
 - ii) **Unit-2** subtitle **Hydrodynamics** alone is removed.
- **Applied Physics – I** paper for first year M.Sc.,- Computer science and Technology department students have to follow the University of Madras syllabus with the following changes,
 - i. **Unit-2** The Basic Transistor and **Unit-5** Fibre optics titles were modified and its contents were rearranged.
 - ii. The following text books were included in the books for studies
 - a) Lasers and Non-Linear Optics – B.B.Laud, New age International Pvt. Ltd, 2011.
 - b) Optoelectronics – Ghatak and Thiyagarajan, Cambridge University press, 1989.

SECOND SEMESTER

- “**Thermal Physics and Acoustics**” is offered as a core paper. The syllabus of this paper have to follow the University of Madras syllabus with following changes,
 - i. **Unit-1** subtitle Low Temperature Physics alone removed.
 - ii. Include “The laws of Thermodynamics” by Peter Atkins, Oxford University Press, New Delhi (2010) in the book for study.
- **Applied Physics – II** paper for first year M.Sc., - Computer science and Technology department students have to follow the University of Madras syllabus with unit titles were changed as follows:
 - i) **Unit-1** -- Electrical properties of Metals
 - ii) **Unit-3** -- Dielectrics

FOURTH SEMESTER

- In paper “**Electricity and Electromagnetism**” is moved from Fifth semester to Fourth semester and also the content of the paper followed the University of Madras syllabus suggested by the external subject experts.

FIFTH SEMESTER

- In paper “**Atomic Physics**” is moved from Fourth semester to Fifth semester and also the content of the paper followed the University of Madras syllabus suggested by the external subject experts.
- In paper “**Solid State Physics**” the following suggestions were carried to rearrange the order of units as per S.O.Pillai books,

- Unit-1* -- Bonding In Solids
- Unit-2* -- Crystal Structure
- Unit-3* -- Defects In Solids
- Unit-4* -- Superconductivity and Magnetism
- Unit-5* -- Dielectric Properties

- a) Include the following title in the books for reference,

- i. *Solid State Physics Principles and Applications* by R.Asokamani, ANSHAN Ltd., 1st Edition, (2006).

- In paper “**Basic Electronics**” The Syllabus of the paper as to follow University of Madras with the modifications

- i) In the *Unit-1* includes topics like diodes, rectifiers. The unit titles were modified and rearranged as follows,
 - a) *Unit-1* Semiconductors and diodes
 - b) *Unit-2* Transistor Amplifier
 - c) *Unit-3* Oscillators
 - d) *Unit-4* Wave Shaping Circuits
 - e) *Unit-5* Semiconductor Devices And Applications

SIXTH SEMESTER

- In paper “**Relativity and Quantum Mechanics**”. The syllabus of this paper has to follow the University of Madras with the following modifications,

- i. *Unit-5* Solution of Schrodinger Equation is combined with *Unit-3* Schrodinger Equation.
 - ii. Quantum statistics was introduced as *Unit-5* and the content as follows: Basic concepts, Quantum ideal gas ,Maxwell – Boltzmann statistics , Application of M.B statistics to molecular energies in an ideal gas, B - E statistics, Application of B - E statistics to photon gases, F-D statistics , Application of F-D statistics to electron gas, Comaprison of three statistics.
- In paper “**Mathematical Methods in Physics**” which includes the new *Unit-5* as **Fourier series** and the following suggestion were carried as to rearrange the order of units as per suggestions,
 - i. *Unit-1* Matrices
 - ii. *Unit-2* Special Functions
 - iii. *Unit-3* Elementary Complex Analysis
 - iv. *Unit-4* Vector Analysis
 - v. *Unit-5* Fourier Series

Annexure – 2

Proposed Regulations and Syllabus for B.Sc., Physics Degree course after incorporating necessary Changes, as Suggested by the Board of Studies Members during the BOS Meeting on 05.07.2017. Recommended to the Academic Council of the College, to take effect from the Academic year 2018-19.



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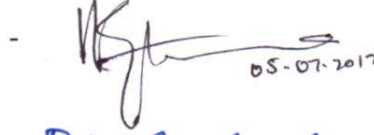


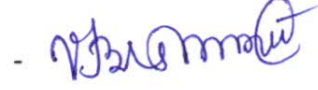

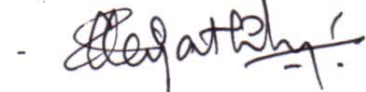
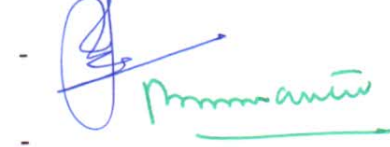

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7. Mr.V.Baskaran -  V. Baskaran
8. Dr.P.Vivek -  P. Vivek
9. Prof. R. Rajathilagam -  R. Rajathilagam
10. Mr. J. Chidambara Subramaniam -  Chidambaram
11. Dr.K.R.Venkatesan - 

Annexure – 1

Suggestions relevant to M.Sc., Physics syllabus - Semester wise:

FIRST SEMESTER

- **Paper 1 - Mathematical Physics** include topics in the University of Madras syllabus as follows:
 - i) **Bessel Functions in the Unit - 2**
 - ii) **Partial Differential Equations** topics like Solution of Partial Differential Equations by the Method of Separation of Variables, Solution of Laplace's Equation in Cartesian Coordinates and Polar Coordinates, Fourier Equation of Heat Flow, Solution of Heat flow equation.

- **Paper 2 - Classical Mechanics and Relativity**
 - i) The overall adoptions of the syllabus was followed the University of Madras Department syllabus suggested by the external subject experts.
 - ii) Include the following text books titles and authors in the books for study
 1. Gupta, Kumar and Sharma, 2015, Classical Mechanics, Pragathi Editon, New Delhi.
 2. G.Aruldas, 2008, Classical Mechanics, PHI, New Delhi.
 3. N.C.Rana and P.S. Joag, 2001, Classical Mechanics, McGraw Hill Education, New Delhi.

- **Paper 3 - Electromagnetic Theory and Plasma Physics**
 - i) This paper is moved from second semester to first semester and also the content of the syllabus followed the University of Madras Department syllabus suggested by the external subject experts.
 - ii) Include the following text books titles and authors in the books for study
 1. J. D. Kraus and Daniel Fleisch, 1999, Electromagnetics, 5th Edition, McGraw Hill Education, New Delhi.
 2. Herbert P Neff and J R Harper, 1987, Basic Electromagnetic field, 2nd Edition, John Willey and Sons, New Delhi.

- **Paper 4 - Integrated Circuits and Microprocessor 8085**

- i) Include the following text book title and author in the books for study
 - i) D. Roy Choudhury and Shail B. Jain, 2011, Linear Integrated Circuits, New Age international publishers, New Delhi.

SECOND SEMESTER

- **Paper 6 – Quantum Mechanics-I**

- i) This paper is moved to second semester from first semester in the University of Madras syllabus and also the content of the syllabus followed the University of Madras Department syllabus suggested by the External subject experts.
- ii) Include the following text books titles and authors in the books for study
 1. N. Zettili, 2016, Quantum Mechanics: Concepts and Applications, 2nd edition, Willey India Pvt. Ltd, New Delhi.
 2. V. K. Thankappan, 2002, Quantum Mechanics: Through Problems, New Age Publishers, Delhi.
 3. W.Greiner, 2008, Quantum Mechanics Special chapters, 3rd Edition, Springer, Delhi.
 4. J. David Griffiths, 2016, Introduction to Quantum Mechanics, 2nd Edition, Cambridge University Press, New Delhi.

- **Paper 7 - Statistical Mechanics**

- i. This paper is moved to second semester from third semester in the University of Madras syllabus and also the content of the syllabus followed University of Madras Department syllabus suggested by the External subject experts.

ii. Include the following text book title and author in the books for study

1. R.K Pathria and Paul D. Beale, 2011, Statistical Mechanics, 3rd Edition, Academic Press, Elsevier, USA.

- **Paper 9 - Spectroscopy**– Include the topic like introduction to Electromagnetic spectrum in the first unit.

- **Paper 11 – Basic Materials Science**

- i) Include the following text book title and author in the books for study

1. W.Calister, 2014, Materials Science and Engineering, 2nd Edition, Wiley India Pvt. Ltd

- **In Practical - II**

- i) include SCR –V-I Characteristics and switching applications
- ii) Arrange the order of experiments UJT, 555, OPAMP, IC
- iii) SCR –V-I Characteristics and angle of conduction.

THIRD SEMESTER

- **Paper 12 - Quantum Mechanics-II**

- i) This paper is moved to third semester from second semester in the University of Madras and also the content of the syllabus followed the University of Madras Department syllabus suggested by the External subject experts.

- **Paper13 - Condensed Matter Physics**

- i) This paper is moved to third semester from fourth semester in the University of Madras
- ii) Unit-4 Superconductivity and Unit-5 Basics of Magnetism are interchanged as per order in the S.O. Pillai book suggested by the external subject experts.
- iii) Unit-5 Basics of Magnetism completely changed as per the suggestion given by the external subject experts.
- iv) Include the following text book title and author in the books for study
 1. N. W. Ascroft and N. D. Mermin, 1976, Solid State Physics, Rhinehart and Winton, New York.

- **Paper 17- Advanced Materials Science**

- i) This paper is moved to third semester from the fourth Semester in the University of Madras syllabus and the title of the paper renamed as Advanced Materials Science.
- ii) Unit-4 title is renamed as Purification and growth of electronic materials.
- iii) Include the following text book title and author in the books for study
 1. W.Calister, 2014, Materials Science and Engineering, 2nd Edition, Wiley India Pvt. Ltd

FOURTH SEMESTER

- **Paper 18 - Nuclear and Particle Physics**

- i) This paper is moved to fourth semester from the third Semester in the University of Madras syllabus.
- ii) Include the following text book title and author in the books for study
 1. V, Devanathan, 2012, Nuclear Physics, 2nd Edition, Narosa India, New Delhi.
 2. L.R.B Elton, 1959, Introductory Nuclear Physics, Pitman Publishers, UK.
 3. W. Greiner, 2015, Nuclear Physics: Present and future, Springer Nature, India.
- iii) Rearrange the units in new order
 - a) NUCLEAR MODELS as first
 - b) NUCLEAR INTERACTIONS as second
 - c) NUCLEAR REACTIONS as third

- **Paper 21 - Nano Science paper is introduced.**

- i) The syllabus and topics are suggested by the external subject experts.

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