


K.S.RANGASAMY COLLEGE OF ARTS AND SCIENCE (AUTONOMOUS)
TIRUCHENGODE - 637215
DEPARTMENT OF PHYSICS


Member of Board of Studies Physics (UG & PG)
Academic year 2019-2020

S.No.	Name & Official Address	Remarks
1.	Dr. K. Thamilmaran Professor Centre for Nonlinear Dynamics School of Physics, Bharathidasan University Tiruchirappalli - 620 024	Nominated by Vice-chancellor
2.	Dr. E. K. Girija Assistant Professor Department of Physics, Periyar University Salem 636 011	Nominated by Academic council
3.	Dr. K.B. Rajesh Assistant Professor Department of Physics Chikkanna Government Arts College, Tiruppur 641602	Nominated by Academic council
4.	Dr. G. Suresh Kumar Assistant Professor and Head (PG) Department of Physics K.S.Rangasamy College of Arts and Science	BOS Chairman

	(Autonomous), Tiruchengode – 637215	
5.	Dr. M. Venkatesh Assistant Professor and Head (UG) Department of Physics K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	Member (internal)
5	Ms. V. Poornima Assistant Professor Department of Physics (UG) K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	Member (internal)
6	Ms. M. Paruvatham Assistant Professor, Department of Physics (UG) K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	Member (internal)
7	Ms. A. Mohanapriya Assistant Professor, Department of Physics (UG) K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	Member (internal)


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8	Ms. R. Fathima Beebei Assistant Professor, Department of Physics (PG) K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	Member (internal)
9	Ms. S. Udhayalakshmi Assistant Professor Department of Physics (UG) K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	Member (internal)
10	Ms. E. Indhulekha Assistant Professor Department of Physics (UG) K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	Member (internal)
11	Ms. S. Kalaiyarasi Assistant Professor Department of Physics (PG) K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	Member (internal)
12	Ms.V.T. JeiElayaGanga Assistant Professor Department of Physics (UG) K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	Member (internal)
13	Dr. S. Senthilkumar Assistant Professor Department of Physics (PG) K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	Member (internal)
14	Ms. R. Rami Assistant Professor Department of Physics (UG) K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	Member (internal)
15	Dr. K.M. Prabhusankarlal Assistant Professor & Head Department of Electronics & Communication K.S.Rangasamy College of Arts & Science Tiruchengode – 637 215	Co-opted Member
16	Mr. J. Navaneetha Krishnan Assistant Professor Department of Mathamatics K.S.Rangasamy College of Arts & Science Tiruchengode – 637 215	Co-opted Member
17	Dr. A. Kathirvel Assistant Professor & Head Department of Chemistry K.S.Rangasamy College of Arts & Science Tiruchengode – 637 215	Co-opted Member


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18	Mr. J. Tamilselvan Assistant Professor & Head (UG) Department of Computer Science K.S.Rangasamy College of Arts & Science Tiruchengode – 637 215	Co-opted Member
19	Mr. T. Periyasamy Team Leader-Photogrammetry Intrasaptial Softech PVT LTD, Banglore	Representing Industry
20	Mr. S. Surendhiran Research Scholar Centre for Nanoscience and Technology K.S. Rangasamy College of Technology Tiruchengode 637 215	Alumni



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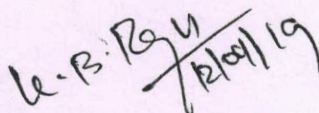

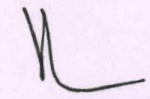
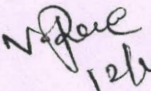

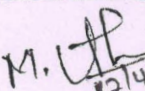


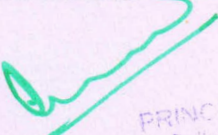
Chairman
BoS – Physics

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The board of studies for Physics (UG & PG) is held on 12-04-2019 at the Department of Physics, K.S. Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215, to update and approve the syllabus for the students admitted from 2018-2019 onwards.

The syllabus for the students admitted from 2018-2019 has been thoroughly discussed and resolved that the programme structure for B.Sc., Physics and M.Sc., Physics are approved with few suggestions. The suggestions given by members are given in Annexure-I & Annexure-II.

S.No.	Name & Official Address	Signature
1	Dr. E. K. Girija Assistant Professor Department of Physics Periyar University Salem 636 011	 12/4/2019
2	Dr. K.B. Rajesh Assistant Professor Department of Physics Chikkanna Government Arts College, Tirunur 641602	 K.B. Rajesh 12/4/19
3	Dr. G. Suresh Kumar Assistant Professor and Head (PG) Department of Physics K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	 G.S. 12/4/19
4	Dr. M. Venkatesh Assistant Professor and Head (UG) Department of Physics K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	 M. 12/4/19
5	Ms. V. Poornima Assistant Professor Department of Physics (UG) K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	 V.Poornima 12/4/19
6	Ms. A. Mohanapriya Assistant Professor, Department of Physics (UG) K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	 A.M. 12/4/19
7	Ms. M. Umavathi Assistant Professor, Department of Physics (UG) K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	 M.U. 12/4/19


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8	Ms. R. Fathima Beebei Assistant Professor, Department of Physics (PG) K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	<i>R. Fathima</i> 12/4/19
9	Ms. S. Udhayalakshmi Assistant Professor Department of Physics (UG) K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	<i>S. Udhayalakshmi</i> 12/4/19
10	Ms. E. Indhulekha Assistant Professor Department of Physics (UG) K.S.Rangasamy College of Arts and Science (Autonomous), Tiruchengode – 637215	<i>E. Indhulekha</i> 12/4/19
11	Dr. K.M. Prabhusankarlal Assistant Professor & Head Department of Electronics & Communication K.S.Rangasamy College of Arts & Science Tiruchengode – 637 215	<i>K.M. Prabhusankarlal</i> 12/4/2019
12	Mr. T. Rajendrakumar Assistant Professor & Head (UG) Department of Mathematics K.S.Rangasamy College of Arts & Science Tiruchengode – 637 215	<i>T. Rajendrakumar</i> 12/04/19
13	Dr. A. Kathirvel Assistant Professor & Head Department of Chemistry K.S.Rangasamy College of Arts & Science Tiruchengode – 637 215	<i>A. Kathirvel</i> 12/4/19
14	Mr. M. Prakasam Assistant Professor & Head (PG) Department of Computer Science K.S.Rangasamy College of Arts & Science Tiruchengode – 637 215	<i>M. Prakasam</i> 12/4/19
15	Mr. J. Tamilselvan Assistant Professor & Head (UG) Department of Computer Science K.S.Rangasamy College of Arts & Science Tiruchengode – 637 215	<i>J. Tamilselvan</i> 12/04/19
16	Dr. G. Saravanan Assistant Professor & Head Department of Biochemistry K.S.Rangasamy College of Arts & Science Tiruchengode – 637 215	<i>G. Saravanan</i> 12/4/19
17	Mr. S. Surendhiran Research Scholar Centre for Nanoscience and Technology K.S. Rangasamy College of Technology Tiruchengode 637 215	<i>S. Surendhiran</i>

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ANNEXURE - I

The following are the corrections and suggestions given by the board of studies members on B.Sc., Physics syllabus.

S.No	Subject	Remarks
1.	General Suggestion	<ul style="list-style-type: none"> Model question paper with knowledge level and mapping may be included in the syllabus book. Smart classes including videos may be arranged to the students for all subjects. Full syllabus should be presented in all BOS meetings
2.	Core V: Atomic physics	<ul style="list-style-type: none"> Introduce and add advanced level Reference books and future applications based on research. Edition for reference and text books should be updated.
3.	SBC I : Instrumentation	<ul style="list-style-type: none"> Include pressure and radiation measurements in Unit II. Also change title as Measurement of physical quantities. Course outcome for unit I and II should be modified.
4.	Core Practical III	<ul style="list-style-type: none"> Give more outcome for practical's based on the experiments
5.	Core VI: Basic Electronics	<ul style="list-style-type: none"> Edition for reference and text books should be updated.
6.	SBC II: Laser Physics & NMEC I: Laser and its applications	<ul style="list-style-type: none"> Include the topics related to laser safety and hazards in the unit V Laser printing and scanning related topics should be included in Unit III. Include Optical fibres and its types and remove total internal reflection. Modify laser communication as IV unit and medical applications as unit V. Introduce laser imaging in Unit V.
7.	Core practical IV	<ul style="list-style-type: none"> Include inverting and non-inverting amplifiers Detail title should be mention for oscillator experiments.
8.	NMEC II : Applied physics	<ul style="list-style-type: none"> Remove the topic of comparison between ordinary beam and laser beam in Unit III. Include CO₂, Semiconductor laser in unit IV. Include non-destructive testing as application in Unit II.
9.	ALC I: Plasma Physics	<ul style="list-style-type: none"> Avoid typographical errors Syllabus should be reduced. Give more reference books.
10	Allied I/III: Physics I	<ul style="list-style-type: none"> Diffraction related topics may be included in Unit IV
	Allied Practical I/III: Physics I	<ul style="list-style-type: none"> Detail title should be mention for compound pendulum CO 1 and CO 2 should be modified based on experiments.



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Dr. G. Suresh Kumar

Chairman- BOS Physics

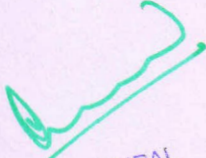
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ANNEXURE - II

The following are the corrections and suggestions given by the board of studies members on M.Sc., Physics syllabus.

S.No	Subject	Remarks
1.	General suggestions	<ul style="list-style-type: none"> • Question paper pattern must contain on compulsory problem in part A for core papers. Instruct it to question paper setter. • Model question paper may be enclosed in syllabus book. • Model question paper should be in the form of sub-division for the five marks. • Edition for reference and text books should be updated.
2.	Elective II: Physics of Nanoscale	<ul style="list-style-type: none"> • Include quantum confinement related topics based on book "M.S. Ramachandra Rao and Shubra Singh. 2013. Nanoscience and Nanotechnology: Fundamentals to Frontiers. [First Edition]. John-Wiley & Sons, USA." • Rearrange Unit-V based on content of applications of nanomaterials.
3.	Elective II: Crystal Growth and Thin Film Physics	<ul style="list-style-type: none"> • Remove the topic crystal system and symmetry and add classical theory of nucleation, kinetic theory and statistical theory in Unit- I. • Unit -II: Add solubility reduction method. • Unit -IV: Remove the topic of preparation transparent and conducting oxides and add spin coating technique. • Unit- IV Change "Vickers microhardness" as "microhardness"
4.	Elective II: Instrumental methods of Analysis	<ul style="list-style-type: none"> • Unit - III: Remove the topic diffractometer • Include Near field scanning Optical microscopy in Unit IV • Unit - V: Add VSM method.
5.	Spectroscopy	<ul style="list-style-type: none"> • Unit - I may be modified based on NET/GATE syllabus. • Include the SERC technique in Unit - II
6.	Core Practical IV: Computation using MATLAB	<ul style="list-style-type: none"> • 9th experiment should be changed as "roots of polynomial equation by graphical method".
7.	IDC I: Solid State Physics	<ul style="list-style-type: none"> • Unit -V: include piezoelectric effect, pyroelectric effect and shape memory alloys. • Include more reference books


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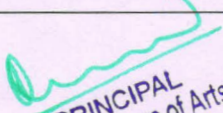
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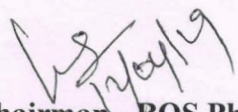
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BOS Meeting & Syllabus Revision Summary (B.Sc., Physics)

Based on the suggestions given by BOS members (Annexure I), COE and minutes of the Department syllabus revision meeting (I, II & III), the following major changes have been made for B.Sc., Physics syllabus (Semester III & IV) which will be effective for the students admitted from 2018 – 2019 onwards..

S.No	Subject	Remarks
1.	Core V: Atomic Physics	New reference books were added and a few new contents were added in Unit – I. There is a 5% change in the syllabus.
2.	Core Practical III: Practical Physics III	Introduced the new experiments in the syllabus, rearranged and updated. There is a 5% change in the syllabus.
3.	SBC I: Instrumentation	Few topics are added namely Pressure, Radiations, Load cell, Column, Type, Devices in Unit II. 10% syllabus changes in the paper.
4.	SBC II: Laser Physics & NMEC I: Laser and its Applications	Optical fiber and its application, laser safety and hazard, laser imaging and medical application of laser contents were newly added to the Units of IV and V. There is a 10% update in the syllabus.
5.	Core VI: Basic Electronics	The new text and reference books were added.
6.	NMEC II: Applied Physics	Removed the topic of comparison between ordinary and laser beams in Unit III. CO ₂ , Semiconductor laser and Non-destructive testing topics were added in Units II & IV. There is 5% changes in the syllabus.
7.	Plasma Physics	This paper is newly added in the semester in Semester IV. 100% New paper.
8.	Add-on Course: Fundamentals of Astrophysics	This paper is newly added in the semester in Semester III. 100% New paper.
9.	Add-on Course: Astronomical Techniques	This paper is newly added in the semester in Semester IV. 100% New paper.


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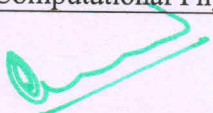
BOS Meeting & Syllabus Revision Summary (M.Sc., Physics)

Based on the suggestions given by BOS members (Annexure-II), COE and Department syllabus revision meeting (I, II & III), the following changes have been made for M.Sc., Physics syllabus (Semester III & IV) which will be effective for the students admitted from the academic year 2018-2019 onwards..

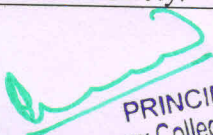
S.No	Subject	Remarks
1	Core VIII: Advanced Electronics	The electromagnetic theory paper is moved to II semester from III. Based on feedback received from various stakeholders. Advanced Electronics paper is moved from the first semester to the third and Electromagnetic Theory paper is placed in the second semester.
2	Elective-II: Physics of Nanoscale	Physics of Nanoscale paper was placed in the third semester and Biomaterial paper is moved to the second semester. Physics of Nanoscale was fully revised with a 50% change in syllabus based on the feedback of various stakeholders.
	Elective-II: Crystal Growth and Thin Film Physics	Uni I & II rearranged; Unit IV: Spin coating was included. Preparation of transparent conducting oxides was removed. There is a 10% change in the syllabus.
3	Elective-II: Instrumental Methods of Analysis	Instrumental Methods of Analysis was introduced as an elective in the third semester and the Molecular Quantum Mechanics paper is removed. 100% change in syllabus.
5	Core practical-III: Advanced Electronics practical	Electronics practical is placed in the third semester combined Microprocessor and microcontroller practical. 10 % syllabus change in this subject.
6	Core-V: Quantum mechanics-II	A few topics were included based on the suggestions of faculty members. There is a 5% change in the syllabus.
7	IDC II: Modern Biomedical Instrumentation	Unit V was revised based on the feedback of various stakeholders. There is a 20% change in the syllabus.
8	Core-X: Spectroscopy	Based on feedback and discussion in BOS, few topics that had been excluded in unit III were Diffuse reflectance spectroscopy and singlet-triplet states


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		The included topics were chromophore & related terms, Sample preparation & solvents effects. There is a 20% change in the syllabus of this subject.
9	Core XII: Computational Physics	Based on feedback, a Computational Physics paper is newly introduced to provide computation skills to the students and provide knowledge on Numerical differentiation, integration and MATLAB for computation. 100% change in the syllabus.
10	Core Practical IV: Computation using MATLAB	Computation using MATLAB practical is newly introduced based on suggestions of various stockholders and to impart knowledge on MATLAB on computation. 100% change in syllabus.
Highlights of M.Sc., Physics Curriculum		
Total number of courses offered in Semester I to IV: 29 courses; 1 Project		
Percentage of syllabus revision was carried out during in semester I to IV		32 %
Average percentage of courses having the focus on employability/ entrepreneurship/ skill development in the semester I to IV		58 %
<u>Employability</u> <ul style="list-style-type: none"> • Core-IV: Condensed Matter Physics (18PPHM104) • Elective II: Physics of Nanoscale (18PPHEL301) • Elective II: Crystal Growth and Thin Film Physics (18PPHEL302) • Elective II: Instrumental Methods of Analysis (18PPHEL303) • Core X: Spectroscopy (18PPHM401) 		
<u>Entrepreneurship</u> <ul style="list-style-type: none"> • IDC Practical I: Multimedia Tools (18PCSPHIP201) • IDC I: Computer Graphics and Multimedia (18PCSPHI201) • Core VIII: Advanced Electronics (18PPHM302) • Core IX: Microprocessor and Microcontroller (18PPHM303) • Core Practical III: Advanced Electronics Practical(18PPHMP301) 		
<u>Skill Development</u> <ul style="list-style-type: none"> • Advanced Physics Practical I (18PPHMP101) • Advanced Physics Practical II (18PPHMP201) • Career Competency Skills I (18PLS101) • Career Competency Skills II (18PLS102) • Core VIII: Advanced Electronics (18PPHM302) • Core Practical III: Advanced Electronics Practical (18PPHMP301) • Core practical IV: Computation using MATLAB 		
Percentage of new courses introduced of the total number of courses in the semester I to IV		17 %
<ul style="list-style-type: none"> • IDC Practical I: Multimedia Tools (18PCSPHIP201) • IDC I: Computer Graphics and Multimedia (18PCSPHI201) • Elective II: Instrumental Methods of Analysis (18PPHEL303) • Core practical IV: Computation using MATLAB • Core XII: Computational Physics (18PPHM403) 		


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<p>Percentage of Elective courses offered in Semester I to IV</p> <ul style="list-style-type: none"> • Modern Optics (18PPHEL201) • Nonlinear Dynamics (18PPHEL202) • Biomaterials (18PPHEL203) • Elective II: Physics of Nanoscale (18PPHEL301) • Elective II: Crystal Growth and Thin Film Physics (18PPHEL302) • Elective II: Instrumental Methods of Analysis (18PPHEL303) 	20%
<p>Percentage of course content having relevance to the local, regional, national, and global needs for the whole program</p> <p>The following courses having content relevance to the local, regional, national and global needs</p> <ul style="list-style-type: none"> • Core IV: Condensed Matter Physics • Elective I: Modern optics • Elective I: Biomaterials • IDC I: Computer Graphics and Multimedia • IDC Practical I: Multimedia Tools Core VIII: Advanced Electronics • Core IX: Microprocessor and Microcontroller • Core practical III: Advanced Electronics Practical • Elective II: Physics of nanoscale • IDC II: Modern Biomedical Instrumentation • Core XI: Nuclear and Particle Physics 	37 %
<p>Percentage and details of courses having crosscutting issues relevant to professional ethics, gender, human values, environment and sustainability.</p> <p>Value education: Human rights</p> <p>M.Sc., Physics curriculum having a common course "human rights" to impart knowledge on democracy, human rights, gender equality, rights for women, children, nomads, refugees and various sector of people in our country.</p> <p>Elective II: Physics of Nanoscale: This course aims to provide the knowledge to the student to develop nanomaterials for future challenges including the search for renewable energies for sustainable development and new technologies for environmental protection</p> <p>Core VIII: Advanced electronics: This course aims to impart knowledge on various semiconductor devices including LED, Solar cells for making sustainable and environment-friendly lightings</p> <p>Core XI: Nuclear and Particle Physics: This course is creating awareness about nuclear radiation and nuclear power for energy production with environmental safety.</p>	13%


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