

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)
Ibrahimbagh, Hyderabad – 500031

DEPARTMENT OF PHYSICS

15.05.2018

MINUTES OF THE MEETING OF THE BOARD OF STUDIES IN PHYSICS
HELD ON 14.05.18 AT 10.00 AM IN V- BLOCK CONFERENCE HALL
VASAVI COLLEGE OF ENGINEERING

The following members were present for the meeting Board of Studies (in Physics) held on 14.05.18 at 10.00 am in V- block conference hall:

S.No	Name	Designation	Category
1.	Dr. G. Prasad,	Professor and Chairman, BoS Department of Physics Osmania University, Hyderabad	Osmania University nominee
2.	Dr. S. Srinath	Professor Department of Physics University of Hyderabad	Member (Subject expert)
3.	Dr. Anajan Kumar Giri	Professor, Department of Physics, Indian Institute of Hyderabad (IIT-H)	Member (Subject expert)
4.	Dr. V. Satyanarayana Murthy	Asst. Professor BITS (Pilani), Hyderabad Campus	Member (Subject expert)
5.	Dr. S. Manorama	Principal Scientist IICT, Hyderabad	Industry/ Research Institution Member (Subject expert)
6.	Dr. J. Siva Kumar	Professor and Head, Department of Physics, Osmania University, Hyderabad	Special Invitee (Subject expert)
7.	Dr. A. S. Sai Prasad,	Professor and HOD Department of Physics Vasavi College of Engineering Hyderabad	Chairman, BOS, Physics
8.	Dr. V.Ravi Kumar, Assoc.	Assoc. Prof. Department of Physics, VCE, Hyderabad	Member
9.	Dr. G. Ramadevudu	Sr. Asst. Prof. Department of Physics, VCE, Hyderabad	Member
10.	Mr. R. Naga Raju	Asst. Prof. Department of Physics, VCE, Hyderabad	Member

Prof. A. S. Sai Prasad, Head and chairman, BOS in Physics welcomed the members to the meeting. He informed the members that the college is set to revise the existing syllabi of Physics as per the guidelines of AITE model Curriculum with effect from the Academic Year 2018-19. Hence there is a need to revise the curriculum of Physics to be offered to first year B.E students in I and II semesters. He outlined the salient features proposed syllabi to the members. He further added that the proposed syllabi are prepared in consultation with the Heads of Engineering Departments of the college.

The following agenda items was taken up for consideration:

1. Approval of first year B.E Scheme of Instruction and Examination (CBCS) with effect from academic year 2018-2019 as per AICTE Model Curriculum:

B.E II-Semester			
CSE & IT		ECE & EEE	CIVIL & MECHANICAL
Optoelectronic Devices		Quantum Mechanics and Semiconductor Physics	Applied Physics
UNIT- I	LED and Photo-Detectors	Introduction To Quantum Mechanics	Lasers
UNIT-II	Semiconductor Lasers	Solution of wave equations	Optical Fibres
UNIT-III	Optical Fibres	Band Theory of Solids	Acoustics
UNIT-IV	Solar Cells	Intrinsic and Extrinsic Semiconductors	Low Temperature Physics
UNIT-V	Sensors and Transducers	Transport Phenomenon in Semiconductors	Materials Science

The Chairman, BOS presented the first year B.E, I and II semesters Scheme of Instruction and Examination under CBCS as per AICTE Model Curriculum with effect from academic year 2018-2019.

The proposed B.E scheme contains physics theory course of 3 (three) hours during per week with two credits each in I and II semesters and 2 (hours) duration physics laboratory course of one credit each in I and II semesters (alternate week-shared with chemistry laboratory) for all the branches of Engineering.

The ratio of marks of Semester End Examination (SEE) to Continuous Internal Evaluation (CIE) is in 60:40. The evaluation process of CIE includes conduct of quizzes, assignments, internal examinations. The Semester End Examination (SEE) for theory and laboratory will be conducted as per the scheme.

The members suggested enhancing the laboratory duration to three hours per week from proposed 2 hours in the scheme.

The members of Board of Studies approved the proposed first year B.E Scheme of Instruction and Examination (CBCS) to be implemented with effect from academic year 2018-2019.

2. Approval of syllabus contents of Physics curriculum of B.E for I and II semesters

B.E I-Semester			
CSE & IT		ECE & EEE	CIVIL & MECHANICAL
Semiconductor Physics		Waves and Optics	Waves, Oscillations and Optics
UNIT- I	Fundamentals of crystal	Oscillations	Oscillations
UNIT-II	Band theory of solids	Wave Optics	Non-Dispersive Transverse and Longitudinal Waves
UNIT-III	Intrinsic and extrinsic semiconductors	Lasers	Ultrasonic Waves
UNIT-IV	Transport phenomenon in semiconductors	Optical Fibres	Wave Optics
UNIT-V	Semiconductor interaction with radiation	EM Theory	EM theory

The chairman, BOS in Physics presented the syllabus contents of the proposed curriculum of B.E I and II semesters to the members. He informed that, based on the AICTE Model curriculum and the local needs of different Engineering Departments of the college the syllabi was designed separately as per the following groups of Branches in I and II semesters. The unit wise syllabi is broadly given below:

The following suggestions on the contents of each unit have been given by the members:

UNIT	Addition of further topics
CSE-IT- I Semester	
Unit-I	structure of NaCl and ZnS
Unit-II	Somerfield theory, Fermi-Dirac Statistics, Schrodinger equation for a particle in a box
Unit-V	Shockley-Read-Hall (SRH) recombination
CSE-IT- II Semester	
Unit-I	Electro-luminescence
Unit-II	condition for lasing
Unit-III	optical fibre as a dielectric wave guide
Unit-IV	fill factor
ECE and EEE-I Semester	
Unit-II	double refraction
Unit-V	boundary conditions
ECE and EEE-II Semester	
Unit-I	Gaussian wave packet, postulates of quantum mechanics.
Unit-II	calculation of transmission and reflection coefficients
Unit-III	Somerfield theory, Fermi-Dirac Statistics, Schrodinger equation for a particle in a box
Civil and Mechanical I Semester	
Unit-IV	double refraction
Unit-V	boundary conditions

The following text books have been suggested to include in the syllabi at the appropriate place:

1. Zeemansky, Heat and thermodynamics, Mc Graw Hill, 7th Ed, 1981
2. L. H. Van Vlack , Elements of Materials Science and Engineering, Addison-Wesley, 1989
3. D. J. Griffiths, "Electrodynamics", Pearson Education, 2014.
4. A. P. French, Vibration's and Waves, CRC Press, 2003
5. Elmer Anderson, Modern Physics and Quantum Mechanics 1e, Saunders College Pub
6. D. J. Griffiths, "quantum mechanics ", Pearson Education, 2012.
7. John Singleton, Band Theory and Electronic Properties of Solids, OUP, 2001
8. Senior, Optical Fiber Communications: Principles and Practice, 3e: Pearson, 2010
9. Pallab Bhattacharya, Semiconductor Optoelectronic Devices, PHI, 2002
10. A.G. Guy, Physical Metallurgy for Engineers, Addison-Wesley Pub. Co.; International Ed edition (1962)
11. Streatman and Ben. G, Solid State Electronic Devices, PHI, 2006
12. Jasprit Singh, Semiconductor Devices Basic Principles, 2000, John Wiley & Sons

Accordingly the above suggestions have been incorporated and the syllabi were revised.

It is resolved to approve proposed syllabi First BE Physics I-semester and II-semester theory CBCS for the academic year 2018-2019 with above suggestions.

3. Approval of lists of proposed experiments of Physics laboratory B.E I and II Semesters (all Branches of Engineering) to be implemented w.e.f the Academic Year 2018-19.

The proposed list of experiments is placed before the members of BOs for discussion. The members have given the following suggestions:

- Physics lab instruction hours must be at least 03 hours as against proposed 02 hour as the slot earmarked for Physics lab class is once in 15 days.

- Since the theory syllabus of I & II Semesters is revised, demonstration and explanation needs more time for the practicals.
- Exposure time to laboratory sessions must be increased to understand application of basic science in the field of Engineering.
- In place of the existing traditional practicals additional calculations in the same experiments may be included. This requires more time. For example, in laser experiment students shall be asked to calculate other characteristics like beam width and angular dispersion etc. and in B-H Curve experiment- additionally students can be asked to compare soft and hard magnetic materials.
- Additional parameters in every experiment can be included and students shall be encouraged to do experiments individually.
- Similarly, in Zener Diode experiment additionally voltage and load regulations can be performed and in Torsional pendulum comparison of rigidity modulus of two wires can be given to students.

It is resolved to approve the lists of experiments of physics laboratory for B.E I and II semesters with effect from 2018-19. In the above list, experiments related to a specific branch of engineering shall be offered.

To approve syllabi of proposed one and two credit open elective courses offered by the department of physics

The academic council approved the following open elective courses offered by the Department of Physics to the B.E. students under CBCS. However some of these courses are revised due to change in number of units in each course.

One Credit Courses

- Display devices
- Fundamentals of vacuum technology
- Introduction to non- destructive testing

Two Credit Courses

- Fundamentals of thin film technology
- Fundamentals of cryogenics
- Smart Materials And Applications

Since the syllabi is revised, some of the topics of above mentioned in the open electives courses were included in the regular syllabi. Hence following open electives courses w.e.f the academic year 2018-19:

- Tribology
- Smart Materials And Applications
- Fundamentals of thin film technology

The BoS, approved the revision of units in the existing open elective courses and credits and approved the proposed open elective courses to be implemented from the academic year 2019-20. The members have suggested to incorporate more open elective hat are much suitable to engineering students.

The meeting ended with vote of thanks by Prof. A.S. Sai Prasad, Head and chairman, Department of Physics



Prof. A.S. Sai Prasad
Head and chairman
Department of Physics

14.05.2018

Department of Physics.

Meeting of Board of Studies in Physics

S.No. Name Designation Signature

1. Prof. J. Shiva Kumar Head, Dept. of Physics
(Spl. Invitee - Subject expt) Osmania Univ.
Hyderabad.

2. Prof. G. Prasad BOS, chairman,
(University nominee) Physics, O.U
Hyderabad.

3. Prof. Anjan Kumar Giri Dept. of Physics
(member) IIT- Hyderabad

4. Prof. Srinath Dept. of Physics
(member) University of Hyderabad
Hyderabad

5. Dr. S. Manorama Senior Scientist
(member) IICT, Hyderabad

6. Dr. V. Satyanarayana Murthy Dept. of Physics
(member) BITS, pilani
Hyderabad

7. Dr. A. Sai Prasad Prof & Head
(Chairman, BOS) Dept. of physics
VCE, Hyd.

8. Dr. V. Ravi Kumar

9. Dr. G. Ramadevudu

10. Mr. R. Naga Raju