



Physics HEAD <hod_physics@cbit.ac.in>

Physics BoS meeting - Invitation

Dr.Y.Srinivasa Reddy Assistant Professor <ysreddy_physics@cbit.ac.in>

Wed, Jul 15, 2020 at 2:38 PM

To: ypurushotham@cmet.gov.in, reddyv@yahoo.com, j_siva_k@yahoo.com, Physics HEAD <hod_physics@cbit.ac.in>, bsreenivasareddy_physics@cbit.ac.in, ysreddy_physics@cbit.ac.in

Dear sir,

Thank you for accepting our invitation to join BoS meeting of Dept of Physics.

I request you to join Physics BoS meeting through ZOOM using the following link.

Time: Jul 16, 2020 10:28 AM India

<https://us02web.zoom.us/j/7695629199?pwd=ZTZxQU5ac2NpUFdLdm9VOGIFN2hmUT09>

Meeting ID: 769 562 9199

Password: 376544

Thank you.

Sincerely yours,

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DR Y S REDDY

ASST PROFESSOR (SR)

DEPT OF PHYSICS

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (AUTONOMOUS)

GANDIPET, HYDERABAD 500 007 INDIA

4. Learns the fundamental concepts of solids
 5. Understands the basics of semiconductors

Course Outcomes:
 At the end of the course, the student will be able to

1. Demonstrate the wave nature of the light
2. Describe the types of lasers and their applications
3. Explain the importance of wave mechanics
4. Demonstrate the importance of band theory of solids
5. Identify the semiconductors for engineering applications

UNIT-I (9 L + 3 T)
Wave optics: Huygens' principle, superposition of waves and interference of light by wave front splitting and amplitude splitting, Young's double slit experiment, Interference in thin films in reflected light, Newton's rings, Fraunhofer diffraction from a single slit, the Rayleigh criterion for limit of resolution, Diffraction grating and its resolving power.

UNIT- II (9 L + 3 T)
Lasers & Holography: Characteristics of lasers, Einstein's coefficients; amplification of light by population inversion, different types of lasers: gas lasers: He-Ne & CO₂, solid-state lasers: ruby & Neodymium, Semiconductor laser, Applications of lasers in Engineering and medicine. Holography: Recording & Reconstruction, Applications.
Fiber Optics: Introduction, optical fibers as guiding dielectric media, Numerical aperture, Step & Graded index fibers, Pulse dispersion, Applications

UNIT- III (9 L + 3 T)
Wave nature of particles and the Schrodinger equation: Introduction to Quantum mechanics, Wave nature of Particles, Time-dependent and time-independent Schrodinger equation for wavefunction, Born interpretation, probability current, wave-packets, Uncertainty principle. Particle in infinite square well potential.

UNIT- IV (9 L + 3 T)
Introduction to Solids: Free electron theory of metals, Fermi level, density of states, Bloch's theorem for particles in a periodic potential, Kronig-Penney model, Scattering from a potential step & barrier,

Lasers & Holography: Characteristics of lasers, Einstein's coefficients; amplification of light by population inversion, different types of lasers: gas lasers: He-Ne & CO₂, solid-state lasers: ruby & Neodymium, Semiconductor laser, Applications of lasers in Engineering and medicine. Holography: Recording & Reconstruction, Applications.
Fiber Optics: Introduction, optical fibers as guiding dielectric media, Numerical aperture, Step & Graded index fibers, Pulse dispersion, Applications

UNIT- III (9 L + 3 T)
Wave nature of particles and the Schrodinger equation: Introduction to Quantum mechanics, Wave nature of Particles, Time-dependent and time-independent Schrodinger equation for wavefunction, Born interpretation, probability current, wave-packets, Uncertainty principle. Particle in infinite square well potential.

UNIT- IV (9 L + 3 T)
Introduction to Solids: Free electron theory of metals, Fermi level, density of states, Bloch's theorem for particles in a periodic potential, Kronig-Penney model, Scattering from a potential step & barrier, and tunneling; scanning tunneling microscope.

UNIT- V (9 L + 3 T)
Semiconductors: Intrinsic and extrinsic semiconductors, charge carrier concentration in intrinsic semiconductors, Dependence of Fermi level on carrier-concentration and temperature in extrinsic semiconductors, Carrier generation and recombination, Carrier transport: diffusion and drift, p-n junction, Thermistor, Hall effect, LED, Solar cell.

Total 60 (L + T)

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY
(Autonomous)
Gandipet, Hyderabad 500 075
Department of Physics

**Minutes of the Board of Studies meeting held on 16-07-2020 at 10:30 AM through Zoom
Cloud Meetings**

The minutes of the meeting are as follows.

Agenda:

1. To consider and approve the revision of B.E./B.Tech. I/IV Physics Syllabus (R20 Scheme).
2. Any other item with the permission of the Chair.

Members Present:

All the following committee members are present in the meeting:

1. Dr. B. Linga Reddy, Professor & Head, Dept of Physics, CBIT - Chairman
2. Dr. J. Siva Kumar, Professor, Dept of Physics, OU - Member
3. Dr. C. Vishnuvardhan Reddy, Dept of Physics, OU - Member
4. Dr. Y. Aparna, Dept of Physics, JNTUH - Member
5. Dr. Y. Purushotham, Scientist – D, C-MET - Member
6. Dr. B. Sreenivasa Reddy, Dept of Physics, CBIT - Member
7. Dr. Y. Srinivasa Reddy, Dept of Physics, CBIT - Member

At the outset, the chairman welcomed the members of Board of Studies and informed about the agenda of the meeting.

1. The proposed Physics Syllabus for B.E./B.Tech. I Year (R20 Scheme) was presented before the committee and was discussed in detail. It was resolved to approve B.E./B.Tech. I year Physics Syllabus in line with AICTE Model Curriculum.
2. The following FOUR theory papers were approved:
 - i. “Optics and Semiconductor Physics” for CSE, IT & AIDS
 - ii. “Mechanics and Materials Science” for Civil & Mechanical
 - iii. “Electromagnetic Theory and Quantum Mechanics” for ECE & EEE
 - iv. “Physics” for Chemical & Biotech.
3. The BoS committee also approved the I Year Physics Laboratory Syllabus.
4. Also, the revised Course Objectives and Course Outcomes of the VIII Semester Open Elective Paper (R18 Scheme) “History of Science & Technology” were also approved by the Committee.

Chairman BoS
&
HoD, Physics



Department of Physics

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