

THE NATIONAL COLLEGE

(AUTONOMOUS)

JAYANAGARA, BENGALURU-70

DEPARTMENT OF ELECTRONICS

Proceedings of the meeting of "BOARD OF STUDIES" in ELECTRONICS
held on 3RD June 2017

Members present

- | | | |
|---|----------|-------|
| 1. CHELUVAPPA.S.
H.O.D of Electronics
The National Degree College
Jayanagar, Bengaluru-70 | CHAIRMAN | Sd/- |
| 2. MAHADEVA.M.
Lecturer, Department of Electronics
The National Degree College
Jayanagar, Bengaluru-70 | MEMBER | Sd/- |
| 3. Dr. RUDRASWAMY
Prof .Department of Physics
J.B. Campus,
Bangalore University, Bengaluru | MEMBER | Sd |
| 4. Dr. MANJESH
Reader, Department of Electronic Science
J.B. Campus
Bangalore University, Bengaluru | MEMBER | Sd/- |
| 5. Sri SRIPADARAJ
Manager
BIGSOLVE Labs
Bengaluru | MEMBER | Sd /- |

A meeting of the B.O.S was held in the department of Electronics, The National Degree college, Jayanagara on **Saturday 03- 06- 2017** at 11 AM. Sri. Cheluvappa. S , H.O.D of Electronics, The National Degree College Jayanagara welcomed the members. He read the proceedings of the last meeting of the Board of studies held on 4TH June 2016. He presented the revised draft syllabus for the B.Sc Fifth and Sixth semesters of autonomous Electronics Course from 2017-2018 onwards, revised syllabus for the Third and Fourth semester Interdisciplinary Course and syllabus for the Add on Course in Electronics

The following were the contents syllabus

Fifth Semester

1. Paper 5E1 - Microcontrollers and Programming
2. Paper 5E2 - Analog Communication

Sixth Semester

1. Paper 6E1 - Verilog HDL and VLSI
2. Paper 6E2 - Advanced Communication

Interdisciplinary Course in Electronics

Third Semester

PAPER IDEL 301: Discover Electronics

Fourth Semester

PAPER IDEL 401: Electronic Gadgets

Add-On Course in Electronics

PCB Design and Fabrication

The chairman presented the draft syllabus for the Fifth and Sixth semester B.Sc Electronics. The draft syllabus was scrutinized. Members suggested a few changes in the draft syllabus. Suggested changes were incorporated in the syllabus. Then the syllabus was approved. The chairman sought the permission of the BOS for the introduction of a new paper titled 'Electronic Gadgets' for the Fourth semester instead of 'Mobile Phone Servicing' .He presented the revised syllabus. The BOS scrutinized the revised syllabus and approved the same. He also sought the permission of the BOS to start an Add-on Course in Electronics. He presented the syllabus for the same. The BOS approved the suggested Add-on course and its syllabus. The BOS also approved The Board of Examiners (BOE) panel presented by the chairman. chairman finally thanked the members for their co-operation.



CHELUVAPPA .S

H.O.D OF ELECTRONICS

THE NATIONAL COLLEGE

JAYANAGARA, BENGALURU -70

Date: 3-6-2017

SIXTH SEMESTER B.Sc
PAPER - 6E2
ADVANCED COMMUNICATION

Lecture Hrs: 3Hrs per week

Total number of Hours: 45Hrs

UNIT I: Digital Communication

14 Hrs

Introduction, Shannon limit for information capacity, Digital modulation –ASK, FSK and PSK, Digital transmission – Advantages and disadvantages. Pulse modulation – Types: PAM, PWM, PPM and PCM. Characteristics of data transmission circuits –Bandwidth requirement, Data transmission speed, Noise, Crosstalk, and Echo –suppressors. Equalizers, Data Modems.

UNIT II: Microwave Devices

08 Hrs

Introduction –Characteristic features of microwaves, Applications.
Microwave devices: Two–cavity Klystron amplifier, The Reflex Klystron, Magnetron, Traveling wave tube (TWT) and Gunn Diode.

UNIT III: Satellite and Optical Fiber Communications

15 Hrs

Introduction – Kepler's laws, Satellite orbits, Geostationary Satellite, Antenna look angles- Azimuth angle, angle of elevation. Satellite classification – Spacing and frequency allocation. Satellite system link models - Up-link, transponder, downlink model and Cross-link. Block diagram of satellite systems, multiple access methods – FDMA, TDMA, CDMA. Introduction to GPS and GPS services- SPS and PPS.

Block diagram of optical fiber communication system, Fiber types, propagation of light through an optical fiber, optical fiber configuration. Critical angle, Acceptance angle, Numerical aperture, Losses in optical fiber cable. Light sources – LED, Laser diode. Light detectors – Photodiode. Advantages and disadvantages of optical fiber communication.

UNIT IV: Mobile Communication

08 Hrs

Introduction, Block diagram of cellular telephone system, Basic cellular phone concept, Frequency reuse, Cell splitting, Incoming and outgoing call, Call handoff. Mobile Phones, Block diagram of a Mobile Phone. Generation of Mobile Phones.

Text Books:

1. Advanced electronic communication systems
- *Wayne Thomasi*,
- PHI VI Edition
2. Electronic Communications Systems
- *Kennedy & Davis*,
- TATA Mac Graw -Hill. VI Edition

Reference Books:

1. Electronic Communication
- *Dennis Roddy and John Coolen*
- PHI, IV Edition
2. Satellite Communication
- *Dennis Roddy*
3. Hand book of experiments in electronics and communication
- *Poornachandrarao & Sasikala*,
- 2004, Vikas publishing house

Practical 6E2

PROJECT

- ❖ Students in a group, not exceeding THREE, should Design, Fabricate and Assemble ONE Electronic project. The Department Faculty is required to guide the project work.
- ❖ Each student should prepare a report and submit at the time of practical examination viva voce duly certified by the concerned Faculty & HOD.
- ❖ Department Faculty shall ensure that the entire project work is carried out in the practical class assigned to practical VIII and the students shall be required to give the Seminar on the project.



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