ACHARYA NAGARJUNA UNIVERSITY

NAAC 'A' GRADE

REGISTRAR

Telephone No: 0863-2346115
Fax:0863-2293378/2293320
Website::http:/www.anu.ac.in

No.ANU/Acad./U.G/CBCS/III Physics/ SEM-VI/Syllabus/2017 Date: 13-11-2017.

PROCEEDINGS OF THE VICE-CHANCELLOR

Sub:- ANU – Academic –UG Courses –CBCS –B.Sc III –Physics
VI Semester Syllabus - Approval - Orders – Issued.

Ref:- 1. Minutes of the meeting of the Board of Studies (UG) in B.Sc Physics held on 23-10-2017.
2. Proceedings of the Vice-Chancellor dated 18-10-2017.
3. Letter dated 23-10-2017 of Dr. Y. Gowri Sankar, Chairman BoS (UG) Courses in Physics.
4. Vice-Chancellor's orders dated 12-11-2017.

O R D E R:- * * * * *

In partial modification of the earlier Proceedings issued in the ref (2) cited, the Vice-Chancellor, after having considered letter of the Chairman in Physics UG BoS in ref (3) cited, has approved the B.Sc III Physics VI semester syllabus (Theory & Practical) under CBCS pattern for the academic year 2017-18 prepared by the Board of Studies (UG) in B.Sc Physics the titles of the Papers are mentioned below:

III B.Sc Physics VI Semester

Any one of the Elective Paper A or B or C:

1. Paper: VII (A): Analog and Digital Electronics

OR

2. Paper: VII (B): Materials Science

OR

3. Paper: VII (C): Renewable Energy

Any one of the Cluster Elective Papers A or B or C:

4. Paper- VIII-(A1): Introduction to Micro Processors and Micro controllers.
VIII-(A2): Computational Methods and Programming.
VIII-(A3): Electronic Instrumentation.

OR

5. Paper: VIII(B-1): Fundamentals of Nanoscience
VIII(B-2): Synthesis and Characterization of Nanomaterials
VIII(B-3): Applications of Nanomaterials and Devices

OR

6. Paper: VIII (C-1): Solar Thermal and Photovoltaic Aspects
VIII(C-2): Wind, Hydro and Ocean Energies
VIII(C-3): Energy Storage Devices.

(BY ORDER)

JOINT REGISTRAR
Academic

To
The Chairman and all members, Board of Studies (UG) in B.Sc Physics ANU.
All the Principals of the Affiliated Colleges under ANU area.
Copy to:
The Dean, Faculty of Physical Science ANU.
The Dean, CDC, ANU.
The Coordinator, UG (Exams), ANU
The Addl. Controller of Examinations, ANU.
The In-Charge, ANU website.
The P.A. to Vice-Chancellor/ Registrar/Rector, ANU.

Andhra Pradesh State Council of Higher Education

B.Sc. PHYSICSSYLLUBUS UNDER CBCS

w.e.f. 2015-16 (Revised in April 2016)

First Semester
Paper I : Mechanics& Properties of Matter
Practical I (Lab-1)

Second Semester
Paper II: Waves & Oscillations
Practical 2 (Lab2)

Third Semester
Paper III: Wave Optics
Practical 3.(Lab 3)

Fourth Semester
Paper IV: Thermodynamics & Radiation Physics
Practical 4.(Lab 4)

Fifth Semester
Paper V: Electricity, Magnetism& Electronics
Paper VI: Modern Physics
Practical 5.(Lab 5)
Practical 6.(Lab 6)

Sixth Semester
PaperVII:Elective (One)
Paper VIII:Cluster Electives (Three)
Practical 7(Lab 7)
Practical 8.(Lab 8)

Proposed Electives in Semester - VI

Paper – VII (one elective is to be chosen from the following0

Paper VII-(A): Analog and Digital Electronics
Paper VII-(B): Materials Science
Paper VII-(C): Renewable Energy

Paper – VIII (one cluster of electives (A-1,2,3 or B-1,2,3 or C-1,2,3) to be chosen *preferably*relating to the elective chosen under paper – VII (A or B or C)

Cluster 1:(A)
Paper VIII-A-1. Introduction to Microprocessors and Microcontrollers

PHYSICS – VI SEMESTER

Modified

Elective VII (A): (Electronics)

Semester –VI

Elective Paper –VII-(A) :Analog and Digital Electronics

No. of Hours per week: 03 **Total Lectures:60**

Unit-I (14 Hours)

1. FET-Construction, Working, characteristics and uses; MOSFET-enhancement MOSFET, depletion MOSFET, construction and working , drain characteristics of MOSFET, applications of MOSFET

2. Photo electric devices: Structure and operation, characteristics, spectral response and application of LDR, LED and LCD

Unit-II (10Hours)

3. Operational Amplifiers: Characteristics of ideal and practical Op-Amp (IC 741), Basic differential amplifiers, Op-Amp supply voltage, IC identification, Internal blocks of Op-Amp, its parameter off set voltages and currents, CMRR, slew rate

Unit-III (10 Hours)

4. Applications of Op-Amp: Op-Amp as voltage amplifier, Inverting amplifier, Non-inverting amplifier, voltage follower, summing amplifier, difference amplifier, comparator, integrator, differentiator.

Unit-IV(14 Hours)

5. Data processing circuits: Multiplexers, De-multiplexers, encoders, decoders

6. IC 555 Timer -Its pin diagram,internal architecture, Application as astable multivibrator and mono stable multivibrator.

Unit-V (12 Hours)

7. Sequential digital circuits: Flip-flops, RS, Clocked SR, JK, D, T, Master-Slave Flip- flops

8. Code Converters: Design of code converter, BCD to 7 segment, binary/BCD to gray, gray to binary/BCD.

Reference Books

1. Digital Electronics by G.K.Kharate Oxford University Press
2. Unified Electronics by Agarwal and Agarwal.
3. Op- Amp and Linear ICs by Ramakanth A Gayekwad, 4th edition PHI
4. Digital Principles and Applications by Malvino and Leach, TMH, 1996, 4th edition.
5. Digital Circuit design by Morris Mano,PHI
6. Switching Theory and Logic design by A.AnandKumar ,PHI
7. operations amplifier by SV Subramanyam.

1 S. G. Sankar BOS

2 MS. Cmi

3 Dr Raghuram
(Dr D V RAGHURAM)

This is for the Academic yearonly for