

**TEACHERS' UNIVERSITY CENTRE FOR DISTANCE EDUCATION
PROGRAMME PROJECT REPORT (PPR)**

TRADITIONAL PROGRAMS AT CTU

Course: Bachelor in Science (Physics)

Duration: 3Years

A. Programme Mission and Objective:

The aim of CTU in starting Bachelor in Science (Physics) is to create Physics professionals for delivering better in education as well as industrial sectors.

(a) Rationale : The main reason for offering this programme are :

Physics is an exciting and ever-growing field- Physics is an emerging field of opportunities as the era has shifted from using technologies of other countries to make our own technology. The field enriches the research activities and promotion activities.

Physics is a diverse and dynamic field- Physics is open for students from varying educational backgrounds such as Science and engineering.

(b) Goals and objectives:

To provide a career for students as a physics teacher, professor or researcher.

To train students with required skills as human resource in physical and technological domain.

B. Relevance of the programme with HEI's Mission and Goals :

The programme is entirely in line with the CTU strategic goals as well as its Mission to provide superior professional education, nurturing translational and transformational research in Physics sector for the benefit of the society. The programme is also consistent with Higher Education vision 2020 to transform society towards knowledge society and making education an improvising tool to realize knowledge, economy and society.

C. Nature of prospective target group of learners :

A class XII Pass Science student from any statutory board in the country or abroad.

The Certificate should have been obtained from a recognized board, established by Indian law and the medium of instruction for the degree should be English. A candidate who has scored minimum passing marks in the qualifying examination will be eligible for admission to the B.Sc. (Physics) Course.

D. Appropriateness of programme to be conducted in open and distance learning mode to acquire specific skills and competence

This course is intended for professional's practitioners, researchers and students from wide range of backgrounds who aim to develop their knowledge and insights pertaining to the Physics. The course is designed to provide critical and practical skills to analyze, evaluate, design and implement solution and strategies with regards to Physics and its issues.

E. Instructional Delivery Mechanism

CTU follows a modern ICT enabled approach for instruction. The methodology of instruction in CTU is different from that of the conventional /regular programs. Our system is learner-oriented and the learner is an active participant in the teaching-learning process. Most of the instructions are imparted through online and distance mode. Academic delivery systems of CTU are:

Print Material: CTU mainly focuses on Self Learning Material (SLM) and their up gradation by eminent teachers/academicians both from CTU and other reputed universities/institutions. As text information plays a vital role in distance education, print based instruction has a critical role in CTU distance learning initiatives.

Audio-Visual Material Aids: The learning package contains audio and video programmes which have been produced by the University for the Enhancement of understanding of the course material given to the student. The video lectures are uploaded in the University website for the student's access.

Online/Virtual Classes: Delivery of classroom-like lectures will also be available in the student portal for enhanced learning experience.

Laboratory facilities: CTU has advanced laboratory for practical training for younger minds to get hands on experience in cutting edge techniques.

I) Identification of Media

Print, Audio-Video and Online media will be utilized for the dissemination of knowledge relevant to the program enrolled.

II) Student support system

CTU provides an exclusive online portal for students to cater to all of their academic related matters such as notification of contact classes, assignment details, course material, and examination schedule. In addition, each student has provision to seek guidance, counseling and career guidance throughout the program.

F. Procedure for admissions, curriculum transaction and evaluation

Admission to all the programs is through notification in newspaper and on University website. The admission procedure involves submission of filled application by the candidates after paying the prescribed fees. The admission scrutiny committee evaluates all the submitted applications and recommends the eligible candidates. The selected candidates are notified through admissions office and also on the University website. The selected candidates are expected to report within the stipulated timeframe for provisional admission to the program.

Curriculum transaction for the program is through the designated online student portal as detailed below.

Skill based ODL Programs at CTU

By now, open and distance learning (ODL) Institutions have established themselves as an alternative to provide education especially at tertiary level. But from past few years many ODL institutions also diverted their attention towards improving skills of teachers and industrial workforce through in-service teaching programme and skill development programmes. Yet, despite the rapid expansion of ODL institutions, policy-makers have limited evidence regarding the actual outcomes and impact of such initiatives. Such ODL based model of improving skills of learners either in job or as their pre-jobs requirement has great importance and relevance in countries like India where there is an urgent need of providing, cost effective training to a large number of untrained work force and need of continuing education at different levels for improve overall their skills and enable them to be part of the productive force in fast growing Indian economy.

B.Sc. Physics Semester-I

Code	Paper	Credit	Internal Assessment	External Assessment	Duration of Examination
	English Language Compulsory	3	30	70	3hrs
	Major/Principal				
PHY 101	Physics (Theory)	4	30	70	3hrs
PHY 102	Physics (Practicals)	3	30	70	3hrs
	Minor-1/Subsidiary-1				
MAT 101	Calculus And Matrix Algebra(Theory)	4	30	70	3hrs
MAT 102	Calculus And Matrix Algebra (Practicals)	3	30	70	3hrs
	Minor-2/Subsidiary-2				
CHE 101	General Chemistry(Theory)	4	30	70	3hrs
CHE 102	Chemistry (Practicals)	3	30	70	3 hrs

B.Sc. Physics Semester-II

Code	Paper	Credit	Internal Assessment	External Assessment	Duration of Examination
	English Language Compulsory	3	30	70	3hrs
	Major/ Principal				
PHY 103	Physics (Theory)	4	30	70	3hrs
PHY 104	Physics (Practicals)	4	30	70	3hrs
	Minor-1 / Subsidiary-1				
MAT 103	Differential Equations and Co-ordinate Geometry(Theory)	4	30	70	3hrs
MAT 104	Differential Equations and Co-ordinate Geometry(Practicals)	4	30	70	3hrs
	Minor-2 / Subsidiary-2				
CHE 103	Chemistry (Theory)	4	30	70	3hrs
CHE 104	Chemistry (Practicals)	4	30	70	3hrs

B.Sc. Physics Semester-III

Code	Paper	Credit	Internal Assessment	External Assessment	Duration of Examination
	English Language Compulsory	3	30	70	3hrs
	Major/ Principal				
PHY 201	Physics (Theory-1)	4	30	70	3hrs
PHY 202	Physics (Theory-2)	4	30	70	3hrs
PHY 203	Physics (Practicals)	2.5	30	70	3hrs

	Minor / Subsidiary				
MAT 201	Advanced Calculus-I (Theory)	4	30	70	3hrs
MAT 202	Linear Algebra- I (Theory)	4	30	70	3hrs
MAT 203	Practicals(Based On MAT201, MAT202 And Numerical Methods-I)	2.5	30	70	3hrs

B.Sc. Physics Semester-IV

Code	Paper	Credit	Internal Assessment	External Assessment	Duration of Examination
	English Language Compulsory	3	30	70	3hrs
	Major/ Principal				
PHY 204	Physics (Theory-1)	4	30	70	3hrs
PHY 205	Physics (Theory-2)	4	30	70	3hrs
PHY 206	Physics (Practicals)	2.5	30	70	3hrs
	Minor / Subsidiary				
MAT 204	Advanced Calculus- II(Theory)	4	30	70	3hrs
MAT 205	Abstract Algebra-I (Theory)	4	30	70	3hrs
MAT 206	Practicals(Based on MAT204, MAT205 and	2.5	30	70	3hrs

	Numerical Methods-II)				
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**B.Sc. Physics
Semester-V**

Code	Paper	Credit	Internal Assessment	External Assessment	Duration of Examination
PHY 301	Mathematical Physics, Classical Mechanics And Quantum Mechanics	4	30	70	3hrs
PHY 302	Molecular Spectra, Statistical Mechanics and Solid State Physics	4	30	70	3hrs
PHY 303	Electromagnetism & Nuclear Physics	4	30	70	3hrs
PHY 304	Linear & Non-linear Electronics	4	30	70	3hrs
PHY 305	(Elective Course): Nanoscience & Nanotechnology (Theory)	2	30	70	3hrs
PHY 306	Practicals	5	60	140	6 hrs
	English Language	3	30	70	3hrs

B.Sc. Physics Semester-VI

Code	Paper	Credit	Internal Assessment	External Assessment	Duration of Examination
PHY 307	Mathematical Physics, Classical Mechanics And Quantum Mechanics	4	30	70	3hrs
PHY 308	Electronic Spectra, Statistical Mechanics and Solid State Physics	4	30	70	3hrs
PHY 309	Nuclear Physics	4	30	70	3hrs
PHY 310	Linear & Non-linear Electronics	4	30	70	3hrs
PHY 311	(Elective Course): Experimental & Measurement Techniques (Theory)	2	30	70	3hrs
PHY 312	Practicals	5	60	140	6 hrs
	English Language	3	30	70	3hrs