DINABANDHU ANDREWS COLLEGE

AFFLIATED TO UNIVERSITY OF CALCUTTA

Department of Physics

UNDERGRADUATE SECTION

Model Reference: University of Calcutta, Syllabus for Physics Advanced (CBCS)

[with effect from July 2018 (2018-19)] (Notification No. CSR/12/18) &
[with effect from July 2019 (2019-20)] (Notification No. CSR/47/19)

The Programme Outcomes (PO) of B.Sc. Honours Physics Curriculum:

Programme Outcomes Nos	Programme Outcomes (PO)
PO A	To prepare the students for M.Sc course as well as to persuade research as a career.
PO B	To impart knowledge in basic sciences and mathematics.
PO C	Develop skills to solve complex scientific problems and gain further expertise to frame further topics for research based on that.
PO D	To develop ability to work effectively as an individual in a group of fellow classmates in laboratory classes.
PO E	Be familiar with modern techniques to run sophisticated instruments, using application software and to fabricate and run different types of electrical and electronic circuits.
PO F	Become acquainted in solving different analytical problems of Physics.
PO G	To comprehend and write effective laboratory notebooks and design documentation, prepare effective presentations, and give and receive clear instructions.
PO H	To develop skills to work in interdisciplinary groups.
PO I	To develop skills to adjust in the current context of rapid technological change of computational and experimental scenario.
PO J	To percolate scientific temperament in the juniors as well as outside of the scientific community.

Programme Specific Outcomes Nos	Programme Specific Outcomes (PSO)
PSO 1	Put in applications in emerging and diversified areas of Physics for higher studies, research and industries related to software and hardware techniques
PSO 2	Develop leadership and managerial skills for to become a competent professional
PSO 3	To develop skills in the field of front level communication technologies (ICT) to communicate innovating ideas and solutions in existing/novel challenges to others
PSO 4	To be acquainted and equipped with good laboratory practices and safety measures

Mapping of PO & PSO for Physics Hons Syllabus of University of Calcutta

Programme Specific Outcomes (PSO) Nos	Programme Outcomes (PO)									
	A	B	C	D	E	F	G	H	I	J
PSO 1	√	√	√		√	√	√			
PSO 2	√			√			√		√	√
PSO 3	√				√	√		√		
PSO 4	√			√	√			√		

Programme Outcome mapping for Semester wise Courses in Physics Honours under University of Calcutta

TABLE I

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)									
		A	B	C	D	E	F	G	H	I	J
SEMESTER-I	PHS-A-CC-1-1-TH, Mathematical Physics – I(Theory)	√	√	√		√	√		√	√	√
	PHS-A-CC-1-1-P, Mathematical Physics - I (Practical)	√	√	√	√	√	√		√	√	

Papers:	PHS-A-CC-1-2-TH Mechanics (Theory)	√	√	√		√	√		√		√
	PHS-A-CC-1-2-P Mechanics (Practical)	√	√	√	√	√			√		√

TABLE II

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)									
		A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
SEMESTER-2	PHS-A-CC-2-3-TH, Electricity and Magnetism (Theory)	√	√	√		√				√	√
Papers:	PHS-A-CC-2-3-P, Electricity and Magnetism (Practical)	√	√		√	√		√		√	√
	PHS-A-CC-2-4-TH Waves and Optics (Theory)	√	√	√		√	√			√	√
	PHS-A-CC-2-4-P Waves and Optics (Practical)	√			√	√		√			√

TABLE III

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)									
		A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
SEMESTER- 3	PHS-A-CC-3-5-TH, Mathematical Physics - II (Theory)	√	√	√		√	√		√	√	√
Papers:	PHS-A-CC-3-5-P, Mathematical Physics - II (Practical)	√	√	√	√	√	√			√	
	PHS-A-CC-3-6-TH, Thermal Physics (Theory)	√	√						√	√	
	PHS-A-CC-3-6-P, Thermal Physics (Practical)	√			√	√		√			√

	PHS-A-CC-3-7-TH Modern Physics (Theory)	√			√	√				√	
	PHS-A-CC-3-7-P Modern Physics (Practical)	√	√		√	√		√	√	√	
	PHS-A-SEC A1 Scientific Writing (Project)	√	√	√	√	√		√		√	
	PHS-A-SEC A2 Renewable Energy	√	√						√		√

TABLE IV

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)									
		A	B	C	D	E	F	G	H	I	J
SEMESTER- 4 **Papers:**	PHS-A-CC-4-8-TH, Mathematical Physics - III (Theory)	√	√	√		√	√		√	√	√
	PHS-A-CC-4-8-P, Mathematical Physics - III (Practical)	√	√	√	√	√	√			√	
	PHS-A-CC-4-9-TH, Analog Electronics (Theory)	√	√	√					√	√	√
	PHSA-CC-4-9-P, Analog Electronics (Practical)	√	√	√	√	√		√			√
	PHS-A-CC-4-10-TH, Quantum Mechanics (Theory)	√			√	√				√	
	PHS-A-CC-4-10-P Quantum Mechanics (Practical)	√			√	√		√		√	

	PHS-A-SEC B1 Arduino (Project)	√	√	√	√	√		√		√	

TABLE V

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)									
		A	B	C	D	E	F	G	H	I	J
SEMESTER- 5 **Papers:**	PHS-A-CC-5-11-TH, Electromagnetic Theory (Theory)	√	√	√			√		√	√	√
	PHS-A-CC-5-11-P, Electromagnetic Theory (Practical)	√	√	√		√	√			√	
	PHS-A-CC-5-12-TH, Statistical Physics (Theory)	√	√	√							√
	PHS-A-CC-5-12-P, Statistical Physics (Practical)	√	√	√	√	√	√			√	
	DSE A1 Advanced Mathematical Methods (Theory) Laser and Fiber Optics (Theory)	√	√					√	√		√
	DSE B1 Astronomy and Astrophysics (Theory) Nuclear & Particle Physics - (Theory)	√	√	√					√	√	√

TABLE VI

COURSE DURATION	COURSE DETAIL	PROGRAMME OUTCOME (PO)									
		A	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**
SEMESTER- 6 **Papers:**	PHS-A-CC-6-13-TH, Digital Electronics (Theory)	√	√							√	
	PHS-A-CC-6-13-P, Digital Electronics (Practical)		√	√			√	√			
	PHS-A-CC-6-14-TH Solid State Physics (Theory)	√	√	√					√		√
	PHS-A-CC-6-14-P Solid State Physics (Practical)	√	√	√			√		√		
	DSE A2 (a)Nanomaterials (Theory) (b)Advanced Classical Dynamics (Theory)	√	√	√	√		√	√	√		√
	DSE B2 (a)Communication Electronics (Theory) (b)Advanced Statistical Mechanics (Theory)	√	√	√	√		√	√	√		√