

FACULTY OF SCIENCES

SKILL ENHANCEMENT COURSE (Compulsory)

SYLLABUS

FOR

**Undergraduate Classes of Arts, B.Sc. Economics, B.A. English
(Honours) and Journalism & Mass Communication**

(12+3 SYSTEM OF EDUCATION)

(Semester I-II)

Examination: 2024-25



**KHALSA COLLEGE
AMRITSAR**

(An Autonomous College)

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(iii) Subject to change in the syllabi at any time. Please visit the College website time to time.

Skill Enhancement Course 2024-25

COURSE SCHEME													
SEMESTER-I													
Skill Enhancement Course	Course Code	Course Title	Teaching Hours/Week	Credits			Total Credits	Max. Marks				Page No.	Syllabus Changed / Same as 2023-24
				L	T	P		Th	P	IA	Total Marks		
SEC	SEC-111	Science and Technology	2	2	0	0	2	37	-	13	50	3	New Course

COURSE SCHEME													
SEMESTER-II													
Skill Enhancement Course	Course Code	Course Title	Teaching Hours/Week	Credits			Total Credits	Max. Marks				Page No.	Syllabus Changed / Same as 2023-24
				L	T	P		Th	P	IA	Total Marks		
SEC	SEC-121	Science and Technology	2	0	0	1	1	-	19	06	25	4	New Course

Semester-I
SEC-111
Science and Technology
(THEORY)

Total Credit: 2
Credits:LTP:200

Time: 3 Hours

Maximum Marks: 37+Internal Assessment 13

Pass Marks: 35%

Max Marks:50

Course Objectives: The purpose of the course is to provide the basic information about physical units, force, pressure, current, resistance, telescope, nuclear energy.

Course Contents:

Instructions for the Paper Setter:

Section A:- Fifteen (15) questions will be set in section A from unit I. Students are required to attempt any eleven (11) questions. Each question carries two (2) marks.

Section B:- Five (05) questions will be set in Section B from unit II. Students are required to attempt any three (03) questions. Each question carries five (5) marks

UNIT-I

Scientific terms and basic concepts of science: -

Brief introduction to units of Physical Quantities, Conversion of Units (CGS To SI Units), Concept of Force (Centripetal and centrifugal), Torque, Pressure, Density, sound, basic idea about Electromagnetic Radiations and their types, LASER and its applications in daily life. Basic introduction to: Electric current (AC/DC), Voltage, Resistance, Voltmeter, ammeter, Electric Power, Multimeter, Electric fuse, Basic introduction to: Reflection, refraction, Identification of Lenses (Concave, Convex). Matter, Periodic table, Nuclear energy (Fission and fusion). Common names and scientific names of commonly used chemicals, Antiseptics, antibiotics.

UNIT-II

Famous Indian personalities: C.V. Raman (Physicist), Salim Ali (Ornithologist), Srinivasan Ranganujan (Mathematician) Satyendranath Bose (Mathematician/Physicist), Homi Jehagir Bhabha (Physicist), Hargobind Khurana (Biochemist) Abdus Salam, Yash Pal (Physicist), APJ Abdul Kalam, N.S. Kapany (Physicist), Dr. S.S Bhatnagar (Chemistry), Prof. Puran Singh (Chemistry)

Prescribed Reading: -

1. What, Why and How Series (Government of India publication)
2. Science reporter
3. General Knowledge 2020 (Arihant Publications)
4. Introduction to Computers. (P.K. Sinha)
5. Website (www.wikipedia.com)
6. Website (www.ipcc.ch)

Sr. No.	On completing the course, the students will be able to:
CO1	Use the multimeter, volt meter and ammeter etc.
CO2	Understand the importance of units of physical quantities.
CO3	Know about the contribution of famous Indian personalities in Science and Technology.
CO4	Develop the scientific temperament

Semester-II
SEC-121
Science and Technology
(Practical)

Total Credit: 1
Credits:LTP:001

Time: 3 Hours

Maximum Marks: 19+Internal Assessment 06

Pass Marks: 35%

General Guidelines for Practical Examination:

I. The distribution of marks is as follows: **19 Marks**

i) One experiment: **7 Marks**

ii) Brief Theory : **4 Marks**

iii) Viva–Voce: **4 Marks**

iv) Record (Practical file): **4 Marks**

II. There will be one sessions of 3 hours duration. The paper will have one session.

Paper will consist of 8 experiments out of which an examinee will mark 6 experiments and one of these is to be allotted by the external examiner.

III. Number of candidates in a group for practical examination should not exceed 12.

IV. In a single group no experiment be allotted to more than three examinee in any group.

Course Objectives: Course objective of this subject is to follow the basic experimental skills in the students. They will be able to demonstrate and able to evaluate the resistance, use of voltmeter ammeter, use of telescope, microscope.

List of experiments

1. Identification of electrical/electronic components.
2. Use of Multimeter in the measurement of resistance, capacitance.
3. Working with mirrors and lenses.
4. Working with microscope.
5. Working with telescope.
6. Taking measurements using various scales.
7. Demonstration of reflection and refraction phenomenon.
8. Demonstration and formation of wave.
9. Measurement of temperature using analog/digital thermometer.
10. Detection of charge using gold leaf electroscope.

*Visit to science museum

Books Prescribed:

1. Practical Physics Vol. I, II T.S. Bhatia, Gursharan Kaur, Iqbal Singh, Vishal Publications.
2. Practical Physics, C.L. Arora, S. Chand & Co.

Sr. No.	On completing the course, the students will be able to:
CO1	Determine resistance, capacitance, AC/DC current
CO2	Study the working of voltmeter, ammeter.
CO3	Working with lens, mirror, telescope, microscope.