

PH-SEC-1

Electrical Circuits and Network Skills (Practical)

Sr.No.	Experiment
1	Identify different electrical components: Resistor, Capacitor, variable resistor, Rheostat, dc voltage sources: battery, battery eliminator, power supply.
2	Use ammeter and voltmeter in a circuit and measure current and voltage
3	Use a Multimeter for measuring (a) Resistances, (b) AC and DC Voltages, (c) DC Current, and Checking electrical continuity.
4	Connect resistances in series and parallel and measure the equivalent resistance using multimeter
5	Build a dc circuit using elements like battery, resistances and switch and measure current flow and voltage drop across the components.
6	Identify the electronic components like rectifying diodes, Zener diodes, transistor, carbon resistance, capacitors, and test them with multimeter

Recommended Books:

1. A textbook in Electrical Technology - B L Theraja - S Chand & Co.
2. A textbook of Electrical Technology - A K Theraja
3. Performance and design of AC machines - M G Say ELBS Edn.



VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
SYLLABUS FOR B.Sc. SEMESTER - II
FRAMED ACCORDING TO
NATIONAL EDUCATION POLICY (NEP) 2020 (Effective from June 2023)
Skill Enhancement Courses
BO-SEC-101 : Natural Resources and Biodiversity

BO-SEC-101	Skill Enhancement Courses - Natural Resources and Biodiversity (2 credits)	30 hours
UNIT I	NATURAL RESOURCES	15 Hours
	<ul style="list-style-type: none">➤ Introduction to natural resources➤ Classification of natural resources➤ Forest resources➤ Water resources➤ Mineral resources➤ Food resources➤ Energy resources➤ Human and natural resources	
UNIT 2	BIODIVERSITY CONCERNS	15 Hours
	<ul style="list-style-type: none">➤ General pattern of vegetation of Gujarat.➤ Biodiversity and its types➤ Conservation of biodiversity➤ In-situ & Ex-situ conservation➤ Biodiversity act➤ Value of biodiversity➤ Factors affecting threats to biodiversity➤ Threats to Biodiversity in India➤ Importance of biodiversity	

REFERENCES:

1. Environmental ecology, biodiversity and climate change, H.M. Saxena
2. Environmental science, Popular prakashan, surat

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B. Sc. Chemistry
VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
Syllabus effective from June, 2023 For
B. Sc. Semester- I
SEC (Skill Enhancement Course)
Total credit: 01 (Theory)
Total Hrs: Theory: 15

Course Code		Title of the Course	Chemistry Lab Operations and Safety Measures
Total Credits of the Course	1	Hours per Week	1 hr.

Course Outcome: By the end of the course, students will be able to	
1.	Understand the importance and significance of laboratory safety and proper regulation of chemistry laboratory, Learn about various handling of chemicals, its storage and disposal.
2.	Identify the appropriate chemical and fire safety hazards and its associated risks, Know the various protective equipment, emergency procedure & first aid.

Introduction to lab operations

8 hours

General guidelines, Handling of glassware, Handling of equipment, Equipment protection, Handling of chemicals, Receipt and labelling of chemicals, Precautions in handling, Chemical spills, Storage and Disposal of chemicals and glassware, Mercury and Biohazardous clean up and disposal procedure.

Safety measures

7 hours

Safety rules, Hygiene, Knowledge about personal safety, Use of personal safety equipment, Respiratory protective equipment, Electrical safety, Fire extinguisher, Laboratory injuries and treatment, Accident management.

Recommended Books/References:

1. *Hazards in Chemical Laboratory* - G. D. Muir
2. *Research Methodology* –C. R. Kothari, New Age International Publishers, New Delhi (2004).
3. *Manufacture, Storage and Import of Hazardous Chemicals Rules -1989.*
4. *Laboratory safety for chemistry students* – R. H. Hill, D. C. Finster, Wiley (2016).

B. Sc. Chemistry
VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
Syllabus effective from June, 2023 For
B. Sc. Semester- I
SEC (Skill Enhancement Course)
Total credit: 01 (Practical)
Total Hrs: Practical: 30

Chemistry Lab Operations and Safety Measures:

Course Code		Title of the Course	SEC-Practical
Total Credits of the Course	1	Hours per Week	2 hrs.

Course Outcome: By the end of the course, students will be able to	
1.	Understand how to minimize the risk of injury and other accidents during chemistry laboratory work

(Minimum 6 Practicals, to be performed)

1. Demonstration and handling of fire-extinguisher.
2. Calibration and handling of burette and pipette.
3. Handling, precautions and calibration of weighing machine.
4. Storage and disposal of chemicals: demonstration and handling.
5. Preparation technique of standard solutions.
6. Laboratory preparation of standard soap.
7. Laboratory preparation of liquid soap.
8. Laboratory preparation of detergent.

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1. *Hazards in Chemical Laboratory* - G. D. Muir
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VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

SYLLABUS FOR B.Sc. (MATHEMATICS)

SEMESTER -I

MATHEMATICS–MH-SEC-101

FUNDAMENTALS OF VEDIC MATHEMATICS-I

Effective from June-2023

(Theory 2 Hours /Week- Credit : 2)

Unit-I

Left to Right calculation: Addition, Multiplication, Writing Left to Right Sums, Subtraction, Digit Sums, Checking Devices, Subtraction from a Base, Bar numbers, General Subtraction. Advantages of Left to Right Calculation Advantages of Bar numbers.

Unit-II

Special methods: Multiplication Near a Base-Number just Below the Base, Above the Base, Above and Below, Proportionality and different Bases. Mental calculation, Special numbers- Repeating numbers, Proportionality, Disguises. Division by Nine etc.

The course is covered by the following reference books:

1. Kenneth R. Williams: Foreword by L. M. Singhvi, Formerly High Commissioner for India in the U. K. Motilal Banarsidass Publishers Private Limited. Delhi-2005
2. Vandana Singhal: Vedic Mathematics for all ages-A beginner's guide, Motilal Banarsidass Publishers, 2014.
3. Jagadguru Swami Sri Bharati Krishna Tirthaji Maharaja: Vedic Mathematics, Motilal Banarsidass Publishers, 2015.
4. S. K. Kapoor: Vedic Mathematics Course @2006. Lotus Press, Darya Ganj, New Delhi-110002. ISBN 81-8382-047-6.
5. S. K. Kapoor: The Teaching of Vedic Mathematics @ 2006. Lotus Press, Darya Ganj, New Delhi-110002.

Skill Enhancement Courses: PH-SEC

B.Sc. Semester-I

Course code: PH-SEC-1

Total Credits: 02 (Theory: 1, Practical; 1)

Total Hrs: Theory: 15, Practical: 30

Course Title: Electrical Circuits and Network Skills

PH-SEC-1

Electrical Circuits and Network Skills (Theory)

Unit-1	Basic Electricity Principles: Voltage, Current, Resistance, and Power. Ohm's law, Series, parallel, and series-parallel combinations. AC Electricity and DC, Electricity. Familiarization with multimeter, voltmeter and ammeter. DC Power sources: AC/DC generators. Inductance, capacitance, and impedance. Operation of transformers.
Unit-2	Main electric circuit elements and their combination: Rules to analyze DC sourced electrical circuits. Current and voltage drop across the DC circuit elements. Single phase and three-phase alternating current sources. Rules to analyze AC sourced electrical circuits. Real, imaginary and complex power components of AC source. Power factor. Saving energy and money, Reading of circuit schematics.: Tracking the connections of elements and identifying current flow and voltage drop.

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VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT
F. Y.B.Sc. SEMESTER- I
ZOOLOGY: ZO - SEC – 101 (Skill Enhancement Course)
(Effective from JUNE-2023)
(Human Health and Management) (02 credits = 02 Hours/Week)
(Total Hours = 30)

1. Common Human Diseases:

- Basic concept of congenital and acquired disease with their examples and types
- Abiotic and biotic diseases causing factors/components
- Pathogens and parasites
- Vectors
- Addictions

2. (A). Causes and Prevention of some common diseases:

- Influenza
- Malaria
- Typhoid
- Diabetes
- Cardiovascular Diseases
- Stroke
- Cancer
- AIDS
- Role of immune system.

(B). Prevention and Management:

- Hygiene and sanitation
- Stress management (through exercise, yoga, meditation etc)
- Vaccines; Medicinal drugs in daily use and basic awareness of few diagnostic techniques

Reference:

1. Diseases of the Human Body: 3rd Edition Carol D. Tamparo and Marcia A. Lewis F.A. Davis Company (2000)
 2. Human Body - Immune System And Common Diseases (2020) Wonder House Books.2020
 3. Anatomy Physiology and health education. Rohini Agrawal CBS Publication (2021)
 4. Public Health, Food Hygiene And Sanitation. SIA Publishers & Distributors Pvt Ltd (2023)
 5. Stress Management. Dreamland Publications (2022)
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