



**SECOND-YEAR OF BACHELOR OF SCIENCE
CHEMISTRY OPEN ELECTIVE COURSE
REVISED SYLLABUS ACCORDING TO CBCS
NEP2020**

**COURSE TITLE: SOLID WASTE MANAGEMENT
SEMESTER-III
W.E.F. 2024-2025**

**RECOMMENDED BY THE BOARD OF STUDIES IN CHEMISTRY
AND
APPROVED BY THE ACADEMIC COUNCIL**

Devrukh Shikshan Prasarak Mandal's

Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce, and
Vid. Dadasaheb Pitre Science College (Autonomous), Devrukh.
Tal. Sangameshwar, Dist. Ratnagiri-415804, Maharashtra,
India

Academic Council Item No:

Name of the Implementing Institute	:	Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce, and Vid. Dadasaheb Pitre Science College (Autonomous), Devrukh. Tal. Sangameshwar, Dist. Ratnagiri-415804,
Name of the Parent University	:	University of Mumbai
Name of the Programme	:	Bachelor of Science
Name of the Department	:	Chemistry
Name of the Class	:	Second Year
Semester	:	Third
No. of Credits	:	02
Title of the Course	:	Solid Waste Management
Course Code	:	CHOE202
Name of the Vertical in adherence to NEP 2020	:	Generic/ Open Elective Courses
Eligibility for Admission	:	Any student admitted to Second Year Degree Programme in adherence to Rules and Regulations of the University of Mumbai and Government of Maharashtra
Passing Marks	:	40%
Mode of Assessment	:	Formative and Summative
Level	:	UG
Pattern of Marks Distribution for SEE and CIA	:	40:60
Status	:	NEP-CBCS
To be implemented from Academic Year	:	2024-2025
Ordinances /Regulations (if any)		

Nya. Tatyasaheb Athalye Arts, Ved. S. R. Sapre Commerce and Vid. Dadasaheb Pitre Science College, Devrukh (An Autonomous College Affiliated with University of Mumbai)

Syllabus for Second Year of Bachelor of Science in Chemistry

(With effect from the academic year 2024-2025)

SEMESTER-III

Course Title: Solid Waste Management

No. of Credits - 02

Type of Vertical: Generic/Open Elective Courses

COURSE CODE: CHOE202

Learning Outcomes Based on BLOOM's Taxonomy:

After completing the course, the learner will be able to...

Course Learning Outcome No.	Blooms Taxonomy	Course Learning Outcome
CLO-01	Remember	remember basic concepts related to waste management.
CLO-02	Understand	understand the composition and characterization of municipal, hazardous and biomedical waste.

Syllabus for Second Year of Bachelor of Science in Chemistry

(With effect from the academic year 2024-2025)

SEMESTER-III

Course Title: Solid Waste Management

No. of Credits - 02

Type of Vertical: Generic/Open Elective Courses

COURSE CODE: CHOE202

COURSE CONTENT			
Module No.	Content	Credits	No. of Hours
1	<p>SOLID WASTE-COLLECTION AND PROCESSING TECHNIQUES</p> <ul style="list-style-type: none"> ○ Sources and generation of solid waste, their classification and chemical composition ○ Characterization of municipal solid waste; hazardous waste and biomedical waste ○ Handling and segregation of Solid Waste at source and methods of separation ○ Transfer and transportation of Solid Waste, Solid waste processing methods (storage, conveying, compacting, shredding, pulping, granulating, etc.) 	01	15
2	<p>EFFECT OF SOLID WASTE DISPOSAL ON ENVIRONMENT & SOLID WASTE MANAGEMENT</p> <ul style="list-style-type: none"> ○ Impact of solid waste on environment, human and plant health ○ Effect of solid waste and industrial effluent discharge on water quality and aquatic life. ○ Solid waste Management- disposal of solid waste (municipal, hazardous and biomedical waste) ○ Sanitary landfill; Pyrolysis and Incineration of waste material; advantages & drawbacks in waste management techniques 	01	15
Total		02	30

Access to the Course

The course is available for all the students admitted for Bachelor of Arts and Commerce faculties.

Methods of Assessment

The assessment pattern would be 40:60, 60% for Semester End Examination (SEE) and 40% for Continuous Internal Assessment (CIA). The structure of the SEE and CIA would be as recommended by the Board of Studies and approved by the Board of Examination and the Academic Council of the college.

References:

1. Bhatia S. C. (2007), Solid and hazardous waste management, Atlantic Publishers and Distributions(P). New Delhi
2. Khan, I. H. and Ahsan, N. (2011) Textbook of Solid Waste Management. CBS Publishers, New Delhi
3. Asnani, P. U. 2006. Solid waste management. India Infrastructure Report 570.
4. Bagchi, A. 2004. Design of Landfills and Integrated Solid Waste Management. John Wiley & Sons.
5. John Pichtel, Waste Management Practices, CRC Press, Taylor and Francis Group 2005.
6. LaGrega, M.D. Buckingham, P.L. and Evans, J.C. Hazardous Waste Management, McGraw Hill International Editions, New York, 2010.
7. Richard J. Watts, Hazardous Wastes - Sources, Pathways, Receptors John Wiley and Sons, New York, 2008.
8. Lie, D.H.F. and Liptak, B.G. Hazardous Wastes and Solid Wastes- Lewis publishers, New York. 2000.
9. La Grega, M.D., Buckingham, P.L. and Evans J.C. Hazardous Waste Management, II Ed, Mc Graw Hill Inc., 2001