NEHRU GRAM BHARATI

(DEEMED TO BE UNIVERSITY)

KOTWA-JAMUNIPUR-DUBAWAL

PRAYAGRAJ-221505, UTTAR PRADESH

VALUE ADDED COURSE OFFERED BY DEPARTMENT OF CHEMISTRY

COMMENCING SESSION – 2021-2022

COURSE DESIGNED BY

DR. ANITA SINGH, COORDINATOR AND ASSISTANT PROFESSOR, DEPARTMENT OF CHEMISTRY

DR. DEEPMALA GUPTA, ASSISTANT PROFESSOR, DEPARTMENT OF CHEMISTRY

&

DR. DOLLY KUMARI, ASSISTANT PROFESSOR, DEPARTMENT OF CHEMISTRY

GUIDELINES FOR VALUE ADDED COURSES

&

Syllabus Certificate courses offered by Department of Chemistry

Introduction

Holistic development of students is the main purpose of curriculum and this is attempted through prescribing dynamic and updated curricular inputs. No university curriculum can adequately cover all areas of importance or relevance. It is important for higher education institutions to supplement the curriculum by making a provision for added courses. Value added courses are part of the curriculum designed to provide necessary skills to increase the employability quotient and equipping the students with essential skills to succeed in life. Department of Chemistry, NGB (Deemed to Be University) offers two value added courses which shall be conducted by experts or in-house staff and help students stand apart from the rest in the job market by adding further value to their resume.

Objectives:

- To cope up with emerging challenges.
- To impart high levels of lateral thinking and the spirit of entrepreneurship.
- To improve employability skills of students.
- To bridge the skill gaps and make students industry ready.
- To provide an opportunity to students develop their inter-disciplinary skills.
- To mould students as job providers rather than job seekers.

Guidelines for conducting value added courses:

Guidelines for conducting value added courses. Value Added Course is not mandatory to qualify for any program. It is a teacher assisted learning course open to all students without any additional fee. However, students shall pay the prescribed examination fee and register along with other courses in that particular semester. Classes for a VAC are conducted during the reserved time Slot in a week

or beyond the regular class hours. VAC may be also conducted during weekends / vacation period.

Registration Guidelines and Procedure

A student will be permitted to register only one Value Added Course in a Semester. No student will be encouraged to opt for the VAC offered by his/her parent Department/Faculty. The course can be offered only if there are at least 5 students opting for it. The students may be allowed to take value added courses offered by other departments after obtaining permission from Head of the Department offering the course.

The list of Value Added Courses shall be displayed in the University Website along with the syllabus. A student shall register for a Value Added Course offered during the semester by submitting the duly filled in registration form (Annexure II) through the concerned Head of the Department.

Duration

The duration of value added course is 30 hours with a combination 16 hours (40%) of theory and 18 hours (60%) of practical. However, the combination of theory and practical shall be decided by the course teacher with the approval of the Head of the Department.

Attendance

Each faculty handling a course shall be responsible for the maintenance of Attendance and Assessment Record for candidates who have registered for the course. The Record shall contain details of the students' attendance, marks obtained in the Continuous Internal Assessment (CIA) Tests, Assignments and Seminars. In addition, the Record shall also contain the organisation of lesson plan of the Course Instructor. The record shall be submitted to the Head of the Department once a month for monitoring the attendance and syllabus coverage. At the end of the semester, the record shall be duly signed by the Course Instructor and the Head of the Department and placed in safe custody for any future verification.

Each student shall have a minimum of 75% attendance in all the courses of the particular semester failing which he or she will not be permitted to write the End-Semester Examination. Relaxation of attendance requirement up to 10% may be granted for valid reasons such as illness, representing the University in extracurricular activities and participation in NCC / NSS.

Evaluation

The value added course shall carry 100 marks with 25% Continuous Assessment and 75% End Semester assessment. The CIA shall be a combination of a variety of

tools such as class test, assignment, seminars, and viva-voce that would be suitable to the course. The internal assessment shall be done based on the performance in the two Continuous Internal Assessment Tests, Seminar and Assignment. The break-up of marks shall be as follows:

Test-I & Test-II - 15

Seminar - 5

Assignment 5

Total 25

Two Assessment Tests shall be conducted preferably one in the middle and the other at the end of the course by the Department concerned. CIA Test-I will cover the syllabus of the first two units while CIA TestII will cover the last three units. The duration of assessment is one hour each.

The pattern of question paper will be decided by the respective faculty. For the CIA Tests, the assessment will be done by the Course Teacher. A student cannot repeat the CIA Test-I and CIA Test-II. However, if for any valid reason the student could not attend the test. The End Semester Examination will be of three hours duration The End Semester Examination shall be valued by the internal examiner appointed by the Controller of Examination on the recommendation of the Head of the Department.

Passing Requirement and Grading

The passing requirement for value added courses shall be 50% of the marks prescribed for the course. While a minimum of 40% marks in End Semester Examination is essential, and there is no passing minimum for CIA Tests. A candidate who has not secured a minimum of 50% of marks in a course (CIA + End Semester) shall reappear for the course in the next semester/year. The grades obtained in VACs will not be included for calculating the he GPA. The percentage of marks obtained by a candidate in a course will be indicated in a letter grade.

Evaluation of the performance of the student will be rated as shown in the table:

Letter Grade	% Marks
A	90-80
B	79-70
C	69-60
D	59-50
E	55-58

Letter Grade Marks % A 90-80 B 79-70 C 69-60 D 59-50 E 55-58 RA Less than 50 W. The students who have successfully completed the Value Added Course shall be issued with a Certificate duly signed by the Authorized signatories along with the semester mark sheet.

Course Name- Certificate course in Laboratory Operation Techniques in Chemistry

Credits- 2 **Lectures + Practical – (16 + 18)**

Program Learning Outcome: Students will be able to prepare chemical solutions for different tests, can be able to differentiate between various technique involves in analysis both conventional and advanced.

Program Specific Outcome:

- Impart the knowledge of the rules of laboratory work.
- Course will be able to develop inter-disciplinary skills in the students.
- Students will be able to apply analysis technique..
- To make the students self-dependent and also job providers.
- Students will be able to analyse unknown samples by using qualitative and quantitative methods.

Course Objective: To make students aware about the rules of laboratory work, qualitative and quantitative analysis, industrial estimation/analysis and instrumental techniques.

Course Learning Outcome: Students will be able to

- Prepare chemical solutions for different tests.
- Acquire in –depth knowledge

Unit l: Rules of laboratory work

Personal Protective Equipment, Behavioral rules for safety, Handling Accidents, Handling Chemicals, Handling glasswares and Equipments, Heating substance, Prepare waste disposal.

Unit ll: Qualitative Analysis

Saturated Solution, Supersaturated Solution, Ionisation Theory, Solubility products, Common ion effect, Buffer Solution, Types of Chemical reaction.

Unit lll Quantitative Analysis:

Methods of expressing solution concentration, Preparation of standard solution, Types of indicators, Acidimetry and Alkalimetry titrations, Redox titrations, Complexometric titrations and Gravimetric Techniques.

Unit lV Qualitative Organic Analysis

Preparation of the reagent, Preparation of the derivatives, An outline of the organic compound, Preparation of organic compound, Estimation / Analysis of Industrial importance.

Unit V Instrumental Techniques:

Conductometric titration, Potentiometric titration, determination of pH Chromatographic technique.