

OFFICE OF THE PRINCIPAL, B.J.B. (AUTONOMOUS) COLLEGE, BHUBANESWAR

No. 260 / Date 20:01.23

То

All H.O.Ds (Regular and Self-Financing Courses)

As per the guidelines of NAAC, and as advised by OSHEC from time to time in different fora, it is desirable for this college to offer various **Add-on Courses**, including **Value Added Courses** to its students in addition to normal courses specified in the curricula. Our desire to offer Value-added courses to students demonstrates our intention of enhancing the academic competitiveness and competence of our students beyond the confines of the degree curriculum. Not only does it substantially strengthen the academic profile of the **concerned departments**, but also demonstrates the institutional commitment to excellence in academic pursuits.

GUIDELINES FOR DEPARTMENTS FOR CONDUCTING VALUE-ADDED COURSES

- 1. The Value-added Courses will be offered at the level of the college itself. The affiliating University will in no way be concerned with the course. The certification will be done by the Principal, B.J.B Autonomous College, Bhubaneswar. No fees, whatsoever, will be collected from the students by the college.
- 2. No grades or credits will be awarded to successful participants. Only **successful participation certificate** will be given, bearing the signature of the Course Coordinator, H.O.D. and the Principal. No mention of the course will be incorporated in the final degree certificate awarded by the college.
- 3. Departments will have the freedom to decide the Value-Added Course to be offered. The course will be chosen in such a manner that the content of the course should supplement and enhance the knowledge and skills of the learners beyond the prescribed courses being taught to them under the normal degree programmes. For guidance and inspiration in this regard, faculty members may browse online through the lists of Value-added courses being offered by well-known academic institutions.
- 4. The department will choose the title of the course to be offered, and design the course consisting of **4 units**.
- 5. Departments may design the course so as to contain a suitable combination of lectures and supervised activities.
- 6. The course will be covered in duration of not less than 30hrs.
- 7. Primarily, courses should be designed in such a manner that they should cater to the needs of the students of their own programme, but departments are also encouraged to offer Value Added Courses in which students from other departments may also join.

- 8. For passing the course participants have to participate in a minimum of 75% of the classes and to secure minimum of 40% of the marks in the concluding test to be conducted at the end of the course.
- 9. Every department will designate a coordinator to conduct the course. Teaching of the course will be distributed by the H.O.D. among all the members of the teaching staff of the department. Departments may invite academicians/subject experts from outside the institution to engage some of the classes.
- 10. No extra remuneration will be paid to the course coordinators, H.O.D.s and the faculty members for conducting the value-added course.
- 11. Since the Courses to be offered are envisaged to be launched as soon as possible, departments are requested to submit the details of the course/s designed by them to the undersigned by 31/01/2023 to be placed before the Staff Council, or other appropriate body, of the college at the earliest for approval.
- 12. H.O.Ds of the Self-Financing courses will submit their proposed courses through their respective Coordinators to the undersigned.

Principal 20-1.23

B.J.B.(Autonomous) College, Bhubaneswar

Memo No. <u>261</u> / Date <u>20 · 01 · 23</u>

Copy to Person concerned/ Coordinator, IQAC/ Academic Bursar/ Legal Bursar/Coordinator, NAAC/ Principal's Guard File/ Head Clerk for information and necessary action.

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B.J.B.(Autonomous) College, Bhubaneswar

DEPARTMENT OF CHEMISTRY VALUE-ADDED COURSE

TOPIC-TECHNIQUES OF CHEMICAL ANALYSIS

• <u>OBJECTIVES OF THE COURSE:</u>

- 1. To make our students well versed about the basic chemical techniques.
- 2. It also aims at learning of principles to deal with operation of modern instrumental techniques.
- 3. To equip our students with cutting-edge research ideas.
- 4. It will improve their acquaintance with better problem solving methodologies.

<u>COURSE OUTCOME:</u>

- 1. Completion of this course will supplement and enhance the boundaries of knowledge our students.
- 2. It will also help in skill-development of students enabling them to become better researchers, scientists and analysts etc.
- 3. They can analyze the quality of soil and water which will help in determining the extent of environmental pollution and usefulness of soil and water.
- 4. On completion of this course our students will be better equipped and encouraged to work at different reputed State and National level organizations like DRDO, BARC, NTPC, IISc. Bangalore, IITs, NISER and IISERs etc. They can also get placement

opportunities in Pharmaceutical Industries and Industries dealing with paints and pigments, Fertilizer Industries etc.

- Course Duration: Minimum 30 hours.
- Eligibility Criteria: +3 Final Year Students
- Seats: 48
- Mode of Selection: Compulsory for all third year students.
- Tentative Commencement of the course: 15-02-23

UNIT-1: TECHNIQUES IN INORGANIC ANALYSIS

- 1. Determination of Biological Oxygen Demand (BOD) of the supplied water sample.
- 2. Determination of Chemical Oxygen Demand (COD) of the supplied water sample.
- 3. Determination of Total Hardness of water by complexometric titration.
- 4. Estimation of Ca by Substitution titration using EDTA.
- 5. Determination of Aluminium as Aluminium 8-Hydroxy quinolinate.

<u>UNIT-2</u>: <u>TECHNIQUES IN ORGANIC ANALYSIS</u>

- 1. Vitamin C Clock reaction.
- 2. Diels-Alder reaction in water and reaction between Furan and Maleic Acid in water at room temperature.
- 3. Extraction of DNA from mashed onion.
- 4. Photo-reduction of Benzophenone.

- 5. Extraction of Caffeine from Tea leaves.
- 6. Preparation and use of Methyl Orange- An Azo dye.

<u>UNIT-3</u>: <u>TECHNIQUES IN PHYSICAL ANALYSIS</u>

- 1. Separation of a mixture of o- and p-nitro phenol or o- and p- amino phenol by thin layer chromatography.
- 2. Basic principles and techniques of Column and Paper Chromatography.
- 3. To determine the partition co-efficient of benzoic acid in between water & benzene and to show that it dimerizes in benzene.
- 4. Estimation of Glycine by pH metry.
- 5. Determination of PO_4^{-3} in natural water by colorimetry.

• UNIT-4: TECHNIQUES IN POLYMER ANALYSIS

- 1. Determination of molecular mass M_v of polyvinyl alcohol viscometrically.
- 2. Redox-polymerisation of acryloamide in homogeneous aqueous method.

Reference Books:

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- 1. University Practical Chemistry by P.C. Kamboj- Vishal Publishing Company.
- 2. Polymer Chemistry by Viswanathan and Gowarikar.
- 3. Practical Books of Indira Gandhi National Open University-CHE-03- L, CHE-12 L.

VALUE ADDED COURSE IN CHEMISTRY Topic:-Techniques of chemical Apolysis Speaker:De Renuka Sahu Today's Topic:-Estimation of Total Headness of Woter by

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VALUE ADDED COURSE -10-TOPIC - TECHNIQUES CHEMICAL ANALYSIS commencement from - 01-03-2023 . COURSE : Dr. Renuka Sahu.

VALUE ADDED COURSE

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Signature of student SE. Class Name of No. Roll NO. Student Ananya B. Mohanty 16 BSP-20- Ananya Barsonake Mohanty 114 Chinmaya Barok 17 BSP-20-084 Chinmaya Barily Rajesh Kuman Samantaraoy 18 OSP-20-111 Rajesh Kumar Samartaray Scham Ampathy 19 BSP-20-109 Scham Tripathy Manasi Mayak Manasi Nayak 20 66020-123 sunita Mahalik Sunita Moholik 21 368-20-042 Nashnin Fashed 22 BSP-20-061 Nathrin Farhad Babu Jally. Boebu Jally. 23 BSP-20-121 24 BSp-20-135 Birmaya Bh. Nayan Bomoya Bu Neyan 25 BSP-20-030 Bikash Malnick Bikash Mellick bearat KN. bated 88 BUD-30-100 becanot kno. boted 27 BSP-20-05 Shive shealy Rash Shive shady pash 28 BSP-20-140 Bajarang Behera Obriatang Behera BSP 20-093 Keshab Nanay ana Mayak 29 yeshelb aller 20 OSP-20-092 GUNGRappan Nayah Guo a run jun Mayel 31 BSP-20-001 Amirudha Pradhon Anirudha Bradhan 32. 13592-10-137 youtik Mandach Kantik Hunedach 33 BSP-20-Of Lasenan propaka 34 BKP-20-099 Ramakasta munipul Ramakati manoh/ 35 RSp-20-017 Lochil Setting Roshul Jethy

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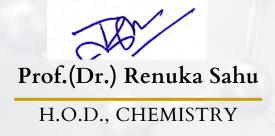


B.J.B. (AUTONOMOUS) COLLEGE DEPARTMENT OF CHEMISTRY



CERTIFICATE OF COMPLETION

This is to certify that Shri/Miss <u>Amisha Pradhan</u> bearing Roll No. <u>BS(P)-20-018</u> of +3 3rd year science Chemistry (Hons.) has completed the Value Added Course in Chemistry (Topic- Techniques in Chemical Analysis) from 01.03.23 to 31.03.23 in the session 2022-2023.



Lahan Prof.(Dr.) G.M. Khan

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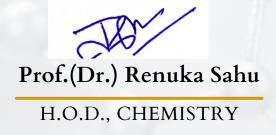


B.J.B. (AUTONOMOUS) COLLEGE DEPARTMENT OF CHEMISTRY



CERTIFICATE OF COMPLETION

This is to certify that Shri/Miss <u>Bikash Mallick</u> bearing Roll No. <u>BS(P)-20-030</u> of +3 3rd year science Chemistry (Hons.) has completed the Value Added Course in Chemistry (Topic- Techniques in Chemical Analysis) from 01.03.23 to 31.03.23 in the session 2022-2023.



Lahan Prof.(Dr.) G.M. Khan

PRINCIPAL

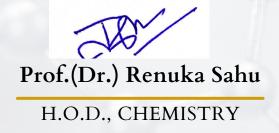


B.J.B. (AUTONOMOUS) COLLEGE DEPARTMENT OF CHEMISTRY



CERTIFICATE OF COMPLETION

This is to certify that Shri/Miss <u>Pravat Kumar Patra</u> bearing Roll No. <u>BS(P)-20-120</u> of +3 3rd year science Chemistry (Hons.) has completed the Value Added Course in Chemistry (Topic- Techniques in Chemical Analysis) from 01.03.23 to 31.03.23 in the session 2022-2023.



Lahan Prof.(Dr.) G.M. Khan

PRINCIPAL