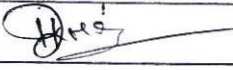

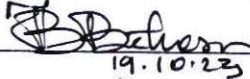
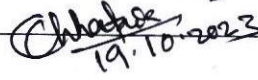


Proceedings of the Teachers Council meeting
held on 21.10/23 at 10 AM

Date _____
Page _____

* (Members present)

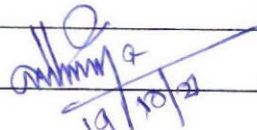
- 1) Prof. P. K. Naik 
- 2) Prof. A. K. Patel, Head (BT & BI) 
- 3) Mr. B. P. Bag
- 4) Mr. B. Behera 
- 5) Mr. (Mrs) C. Chatterjee 

* (Business conducted)

1) The Head (BT & BI) apprised the teachers council regarding the provision of MOOC course (3 CH) in the P.G. Curriculum for the Department of BT & BI as per the letter issued by the COE, SU vide letter No- 6043/ ACOA-I dated 18.10.2023.

Resolved that - the following MOOC course "Experimental Biotechnology" will be incorporated in the 4th semester for both M.Sc (Biotechnology) and M.Sc (Bioinformatics) from the academic session (2022-23).

2) Resolved that a sum of Rs. 4395/- (Rupees four thousand three hundred ninety five only) be sanctioned & released out of the M.Sc (BT) fund for electrical settings in Animal Biotechnology laboratory.


19/10/23

Head
P.G. Dept. of BT & BI
Sambalpur University
Jyoti Vihar-768 019, Odisha

MOOC-	EXPERIMENTAL BIOTECHNOLOGY	3 CH	100 MARKS
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- CO-1: Remember and understand the basic concepts/Principles of **Experimental Biotechnology**
CO-2: Analyse the Various Concepts to understand them through case studies
CO-3: Apply the knowledge in understanding practical problems
CO-4: Execute/Create the Project or field assignment as per the knowledge gained in the course

Unit-I

Microbial Techniques: Staining techniques; Establishment of pure cultures; Antibiotic sensitivity assay; MIC and MBC; Determination specific growth rate, yield and microbial metabolic quotient; Strategies of Down-stream processing; Optimization of parameters for large scale production in bioreactor; Determination of average conversion rate in batch and CSTR.

Unit-II

Biochemical Techniques: Protein estimation: Lowery, Bradford, BCA; Carbohydrate estimation: Anthrone, Phenol-Sulphuric acid, DNS assay; Estimation of amino acid: Ninhydrin, TLC; Ramchandran plot; Enzyme Kinetics: Lineweaver Burk plot, Eadie Hofstee plot, Hanes plot; Catalytic efficiency of enzymes: V_{max} and K_m (Competitive, non-competitive and uncompetitive)

Unit-III


Immunological Techniques: Hybridoma technology; Immnodiffusion assay: SRID, DRID; Determination of antigen titer: ELISA, ELISPOT, immnoelectrophoresis; Immunohistological techniques; Flow cytometry: principle and application of FACS

Unit-IV

Recombinant DNA Techniques: Blotting techniques: Northern, Western, Southern; RNA interference: Antisense technology and Ribozyme technology; Genomic and c-DNA library; Phage display; S1 mapping; RNase protection assay; Yeast two hybrid assay

Suggested reading:

1. Microbiology, Jr Michael J Pelczar, Ecs Chan, Noel R Krieg, Tata Mcgraw Hill Publishing Co Ltd (2016). ISBN-13: 978-0074623206.
2. Microbiology, Donald A. Klein, John P. Harley, Lansing M. Prescott, 6th Ed., McGraw Hill (2005). ISBN-13: 978-0072951752.
3. Lehninger Principles of Biochemistry, David L. Nelson, Michael M. Cox, Freeman, W. H. & Company (2008). ISBN-13: 978-0716743392.
4. Fundamentals of Biochemistry: life at the molecular level, Donald Voet, Judith G. Voet, Charlotte W. Pratt, New York: Wiley (2016). ISBN-13: 978-1118129180.
5. Biochemistry, Jeremy M. Berg, John L. Tymoczko, Gregory J. Gatto, Lubert Stryer, 8th Ed., Freeman and company (2015). ISBN-13: 978-1464126109.
6. Kuby Immunology. Judith A Owen, Jenni Punt, Sharon A Stranford, 7th Ed., W.H. Freeman and Co., New York (2013). ISBN-13: 9781429219198
7. Principle of gene manipulation and Genomics, S.B Primrose, R.M Twyman, 6th Ed., Blackwell Science Ltd (2014). ISBN-13: 9788126548392
8. Genes IX, Benjamin Lewin, Jones and Bartlett Publishers (2010). ISBN-13: 978-9380108537.


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