



FORMAT FOR COURSE CURRICULUM

Course Title: Nanobiotechnology

Course Code:

Credit Units: 03

L	T	P/S	Lab	TOTAL CREDIT UNITS
03	0	0	0	03

Course Objectives:

The course aims at making an understanding of nanobiotechnology in the field of biological sciences. It will enable the student to explore advance biotechnoly research.

Pre-requisites: Fundamentals of electrical sciences, & biochemical engineering

Student Learning Outcomes:

It help the student to understand:

- To understand the new emerging field of Biotechnology
- Interdisciplinary aspect of biotechnology and its application.

Course Contents/Syllabus- Theory:

	Weightage (%)
Module I	30
INTRODUCTION TO CONCEPTS OF NANOBIO TECHNOLOGY: From Biotechnology to Nanobiotechnology, nanomaterials-Properties & characterization	
Module II	30
Nanomaterials and biosystem interaction Nanoconjugates, peptide coupled Nanoparticle, Biological nanomotors	

Module III	40
Applications Nanoscale device for drug delivery and gene delivery, microarray – nanobiochip, biosensor.	

Pedagogy for Course Delivery:

Lectures:35

Tutorial:8

Presentation/ Seminar: 2

Class Test: 2

Total: 45

Text & References:

Text Books:

1.Nanobiotechnology I & II: More Concepts and Applications, [Chad A. Mirkin](#) (Editor), [Christof M. Niemeyer](#) (Editor),

ISBN: 978-3-527-31673-1; Wiley publications

2. Smart Biosensor Technology, George K. Amarjeet S. Bassi, CRC press, 2006.

3. Surface Design: Application in Biosciences and Nanotechnology, Hoboken, NJ, USA: Wiley-VCH, 2009

[Renate Förch](#) (Editor), [Holger Schönherr](#) (Editor), [A. Tobias A. Jenkins](#) (Editor) ,ISBN: 978-3-527-40789-7,June 2009

1.

Any other Study Material:

- Research Papers