

BIOMATERIALS

UG - BSE 411A & PG – BSE 613A (11 credits)

Instructor: Prof. Dharendra S. Katti
Contact: Office: Lab. No. 16, 2nd floor, BSBE Dept.
Tel: 2594028 (office), 2594029 (lab.), Email: dsk@iitk.ac.in

Meeting times: Tue., Wed., Thu.; 8.00 am – 8.50 am on all days;

Venue: Seminar Hall, BSBE Dept.

Teaching Assistant: Sriram M. [sriramm@] & Sunandan Dhar [sunandan@]
Friday 5.00 – 6.00 pm. (Lab. No. 16, 2nd floor, BSBE Dept.)

Exams: Mid-Sem. I – 18th-23rd Sept. 2017 (2 hrs.)
End-Sem. – 18th-27th Nov. 2017 (3 hrs.)

<u>Weightage for Grade:</u> Mid-Sem.	- 25%
Project [#]	- 20%
Assignments/Quizzes*	- 15%
End-Sem	- 35%
Attendance**	- 5%

[[#] Project consists of a report (50%) and a presentation (50%); * Assignments/Homeworks are due by 5.00 pm on Monday of the next week (submit in Dr. Katti's mail box); ** for every class you miss you loose 0.5% i.e. if you miss 10 classes you get no credit for attendance]

Final Grade: The final grade will be relative (separate grading for BSE 411 and BSE 613).

Course Content:

Part I – Materials Science & Engineering

Chapter 1 – Properties of materials

Chapter 2 – Classes of materials used in medicine

Part II – Biology, Biochemistry & Medicine

Chapter 3 – Background concepts

Chapter 4 – Host reaction to biomaterials and their evaluation

Chapter 5 – Biological testing of biomaterials

Chapter 6 – Degradation of materials in the biological environment

Chapter 7 – Application of materials in medicine, biology and artificial organs.

Part III – Presentation and discussion of published papers (4-6 papers depending on availability of time)

Part IV – Presentation of projects and submission of written reports.

Text Book: Biomaterials Science: An Introduction to Materials in Medicine, 3rd Edition.
Authors: B.D. Ratner, A.S. Hoffman, F.J. Schoen, and J.E. Lemons

A note on plagiarism: According to Merriam-Webster dictionary 'plagiarism' means the act of stealing or passing off another person's ideas or words as one's own without crediting the source. Plagiarism is a very serious offence. For this course specifically and in future as well you must refrain from committing this crime. If you want to communicate someone else's idea, translate (not copy or just alter a couple of words) it in your own language and give reference to the source. If you are found plagiarizing you will get '0' (zero) for that exam.

Calendar for Biomaterials (BSE 411A/613A) Semester I- 2017-18

Event	Date
Classes commence	1 st Aug, 2017 (Tuesday)
First assignment	18 th Aug, 2017 (Friday)
First paper discussion	24 th Aug, 2017 (Thursday)
First quiz	29 th Aug, 2017 (Tuesday)
Second assignment	8 th Sep, 2017 (Friday)
Declaration of project groups	
Second paper discussion	12 th Sep, 2017 (Tuesday)
Mid semester exams	18 th - 23 rd Sep, 2017 (Monday – Saturday) [24 th Sep – 2 nd Oct: mid-sem break]
Third assignment	6 th Oct, 2017 (Friday)
Submission of project abstracts	
Third paper discussion	10 th Oct, 2017 (Tuesday)
Discussion of project abstracts	13 th Oct, 2017 (Friday) (6:00 - 7:30 P.M.)
Second quiz	17 th Oct, 2017 (Tuesday)
Fourth assignment	24 th Oct, 2017 (Tuesday) [Antaragni 26 th – 29 th Oct 26-29]
Submission of Project reports	6 th Nov, 2017 (Monday)
Fourth paper discussion	7 th Nov, 2017 (Tuesday)
Submission of Project PPTs	9 th Nov, 2017 (Thursday)
Project presentations	11 th Nov, 2017 (Saturday)
Last day of classes	15 th Nov, 2017 (Wednesday)
End semester exams	18 th – 27 th Nov, 2017 (Saturday – Monday)