

# TISSUE ENGINEERING

## UG - BSE 421A & PG - 614A

Instructor: Dr. Dharendra S. Katti  
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Meeting times: Mon., Wed, Fri. 9-9.50 am  
Venue: Seminar Hall, BSBE Dept.

Teaching Assistant: Aman Mahajan (amanmah@) & Namrata Baruah (bnamrata@)

TA office hours: Friday 5.00 – 6.00 pm. (Lab. No. 16, 2<sup>nd</sup> floor, BSBE Dept.)

Exams (Tentative Schedule): Mid-Sem. – Feb 19<sup>th</sup> to Mar 24<sup>th</sup> 2018 (2 hrs)  
Project Pres. – Apr. 7<sup>th</sup> / 14<sup>th</sup> 2018  
End-Sem. – Apr. 22<sup>th</sup> to May 2<sup>nd</sup> 2018 (3 hrs)

<u>Weightage for Grade:</u> Mid-Sem	-	20%
End-Sem.	-	30%
Project <sup>#</sup>	-	20%
Assignments/Homework <sup>*, \$</sup>	-	15%
Quiz's <sup>\$</sup>	-	10%
Attendance <sup>**· ▲· ♣</sup>	-	5%

[<sup>#</sup> Project consists of a report (50%) and a presentation (50%); \* Assignments/Homeworks are due by 5.00 pm on Monday of the next week; \$ The weightage is tentative and could be altered depending on the number of assignments/quiz's conducted; \*\* for every class you miss you loose 0.5 % i.e. if you miss 10 classes you get no credit for attendance; ▲ If a student signs off for another students (in his/her absence), both will get zero credit for attendance; ♣ If a student misses more than 15 classes he/she will be deregistered from the course]

Final Grade: The final grade will be relative and separate for UG and PG students.

Course Content: Part I – Quantitative Cell and Tissue Biology  
Chapter 2 – Tissue Organization; Chapter 3 – Tissue Dynamics  
Chapter 5 – Stem Cells; Chapter 6 – Cell-Fate processes  
Chapter 7 – Coordination of Cellular-Fate Processes  
Part II – Cell and Tissue Characterization  
Chapter 9 – Cell and Tissue Properties  
Chapter 10 – Cell and Tissue Culture  
Part III – Engineering Methods and Design  
Chapter 15 – Biomaterial Scaffolds  
Chapter 16 – Tailoring Biomaterials  
Part IV – Clinical Implementation  
Chapter 17 – Conventional Clinical Approaches to Tissue Dysfunction  
Chapter 19 - Producing Tissue-Engineered Therapies  
Part V – Research paper presentation and discussion (4-6 papers)  
Part VI – Group Project (Report and presentation)

Text Book: Tissue Engineering. Authors: Bernhard O. Palsson & Sangeeta N. Bhatia

Reference Book: Principles of Tissue Engineering. Authors: Robert P. Lanza, Robert Langer, Joseph Vacanti

**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 of events for  
Tissue engineering (BSE-421A/614A)  
2017-2018 Semester II**

<b>Classes commence</b>	<b>Jan 8, 2018, Monday</b>
First assignment	Jan 19, 2018, Friday
First paper discussion	Jan 22, 2018, Monday
First quiz	Jan 31, 2018, Wednesday
Second assignment	Feb 9, 2018, Friday
Second paper discussion	Feb 12, 2018, Monday
<b>Mid semester exams</b>	<b>Feb 19 – Feb 24, 2018 (Mon – Sat)</b>
<b>Mid semester recess</b>	<b>Feb 25 - Mar 4, 2018 (Sat – Sun)</b>
Third assignment	Mar 16, 2018, Friday
Third paper discussion	Mar 19, 2018, Monday
Fourth assignment	Mar 30, 2018, Friday
Second quiz	Apr 2, 2018, Monday
Fourth paper discussion	Apr 4, 2018, Wednesday
Project presentation	Apr 7/14, 2018, Saturday
<b>Last day of classes</b>	<b>Apr 20, 2018 Friday</b>
<b>End semester exams</b>	<b>Apr 22 – May 2, 2018 (Sun–Wed)</b>  <b>* Apr 30, 2018- Holiday</b>