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## **Technologies, Disruptions and Entrepreneurial Opportunities (Audit Course)**

**Background:** Since last few decades, technologies are improving at exponential rates. The college curriculum cannot be modified to ensure inclusion of these new developments. Therefore, this audit course is designed to give a high level overview of the new exponential technologies, resulting disruptions in businesses and opportunities getting created for entrepreneurs.

**Pre-Requisites:** One year of technology courses in any department of engineering college.

### **Course Objectives:**

1. To understand the process of growth of exponential technologies and the resultant disruptive scenarios in business, social, government sectors of economy.
2. To understand the few exponentially growing technologies and few business scenarios where disruptions are expected.
3. To understand where the entrepreneurial opportunities are emerging and how new engineers will be able to exploit these opportunities.

**Teaching Methodology:** This is a flipped course which will consist of reviews in classroom lecture sessions and practical assignments and exercises. Three practical assignments will be evaluated during the term for 60 marks and a theory exam will be conducted at the end of the course for 40 marks.

**Teaching Scheme:** Theory 02 hrs/ week, Practicals 03 hrs/ Alternate week

### **Course Outcomes**

1. Students will have better understanding of the process of technology trends leading to Business Disruptions and entrepreneurial opportunities.
2. Students will appreciate the technologies that they need to learn independently to better achieve their entrepreneurial career goals.

### **Number of students:**

1. For Lecture sessions: Maximum 40
2. For Practical sessions: Maximum 20 for each department of engineering. A faculty member of the department may be associated as teaching assistant to help students complete their practical work in the technologies related to the specific department.

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## Course Contents

	Lecture	Practical
<b>Unit 1 Introduction</b> The process of emerging new technologies with exponential growth potential, how these exponential technologies lead to business disruptions, opportunities created for new businesses, destruction caused of established players, evolution of new businesses, Unicorns.	2 hrs	3 hrs
<b>Unit 2 Emerging Exponential Technologies</b> Understand Technology trends worldwide and identify the potential emerging exponential technologies like, Social, Mobile, Analytics, Computing (SMAC), Genetics, AI, 3D, Solar/Wind/Renewable, block chain.	4 hrs	3 hrs
<b>Unit 3 Emerging Business Disruptions and Business models</b> Learn business trends worldwide and identify potential business disruptions in multiple sectors like, Healthcare, Transportation, Weapons, Governance, Space, Energy, Finance and Education. Learn the new innovative business models.	4 hrs	3 hrs
<b>Unit 4 Identify Entrepreneurial Opportunities and Conclusions</b> Identify use cases and jobs to be done, customer pains and gains, solution development, prototype, problem-solution fit, product–market fit, customer development and validation.	2 hrs	

### Reference Books:

Innovator's Dilemma

by Clayton Christenson (<http://hbx.hbs.edu/hbx-courses/disruptive-strategy.html>)

Disruption: Emerging Technologies and the Future of Work

by Victor del Rosal (Paperback)

Mastering the Hype Cycle: How to Choose the Right Innovation at the Right Time

by Jackie Fenn, Mark Raskino (Hardcover)

The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses

by Eric Ries (Hardcover)

Exponential Organizations: Why new organizations are ten times better, faster, and cheaper than yours (and what to do about it)

by Salim Ismail, Michael S. Malone, Yuri van Geest (Paperback)

Abundance: The Future Is Better Than You Think

by Peter H. Diamandis, Steven Kotler (Paperback)

Wharton on Managing Emerging Technologies

by George S. Day and Paul J. H. Schoemaker

### Notes and Online Resources:

Majority of exponential technologies and disruptive business scenarios that are discussed in the course are not covered in any single existing textbooks. Therefore, notes and extensive online resources, will be used as course material.