

INDIAN INSTITUTE OF TECHNOLOGY TIRUPATI
PROFORMA FOR NEW COURSE

1.	Title of the Course	Product Innovation and Development
2.	Course Number	ID3022
3.	Status of the Course	Elective
4.	Structure of Credits	3-0-0-3
5.	Offered To	UG
6.	New Course/Modification to	New
7.	To be Offered by	Dr. Hiran Vedam, Sr. Project Advisor, IITT
8.	To take effect from	January 2019
9.	Prerequisite	Nil
10.	Whether approved by the Department	Yes
11.	Course Objective: This course combines theory and practice to guide the students through the process of building an innovative product that combines usability, aesthetics and manufacturability. Students will demonstrate their ability either in teams or individually depending on the problem chosen. Students will be expected to do off-site research and engage with the user. In addition, students will build their prototypes in the labs.	
12.	Course Content: The elements of good and bad design by example. Introduction to the design process, user research, human factors and ergonomics. Understanding the user and the use environment through observation, discussions and direct experience; Translating customer requirements to design requirements; Ideation; Human factors and manufacturability in design; CAD modeling for product design; Prototype development; Usability analysis and testing	
13.	Text book(s): 1. Ulrich, K. T , Eppinger, S.D, <i>Product design and development</i> , 5th Edition, (2017).	
14.	Reference(s): 1. Haller, L. , Cullen, C. D <i>Design Secrets: Products 1 & 2 : 50 Real-Life Product Design Projects Uncovered</i> , Industrial Designers Society of America., (2017). 2. Norman, D., <i>The Design of Everyday Things, An industry classic explaining how to design products for real human use.</i> , (2020). 3. Brown, T., <i>Change by Design, A primer on the idea of “design thinking,” and working from inspiration to innovation.</i> , (1968). 4. Liedtke, J., <i>Designing for Growth, Another book on design thinking–this one filled with question lists and exercises to get you going.</i> , (2018). 5. Kelley, T., <i>The Art of Innovation: Lessons in Creativity from IDEO, America’s Leading Design Firm</i> , (2019).	