No.: GTU/GIC/DIC/Course/2021/6205　　　　　　　Date: 27/ 10 / 2021

Circular
Online Short-Term Certificate Courses under Design Innovation Centre

To,

Principals/Directors of Colleges affiliated to GTU

About Design Innovation Centre (DIC) – GTU:

GTU since its foundation in 2007, is striving to create, achieve and support the unique initiatives in design, innovation and entrepreneurship to build a holistic ecosystem by intervention of latest technologies. Considering its efforts in developing such ecosystem, MHRD has awarded the grant to GTU for establishment of a full-fledged Design Innovation Centre (DIC) to promote, nurture and advance the culture of design, innovation, creative problem solving and entrepreneurship among young minds at GTU premise as Hub and other three institutes in Rajkot, Surat and Modasa as spokes to cover entire state. DIC would support Innovators in product design and development, prototype building through full- fledged FabLab, mentorship and networking, IPR support, training and workshop, skill developments, fellowship and awards to best projects/solutions and co-working space.

About DIC Certificate Courses:

India with its 65% population as youth (18-35 years) has tremendous potential to develop into the hub of expert workforce for the world. This can be fulfilled through skill development for everyone in that age bracket across the country. But, the access of various sections of population to such skill development activities limits the potential of the youth and in turn the growth of the country. An Engineer already has a technical/logical understanding and logical thinking with sound knowledge of Engineering and thus these can enhance the problem-solving ability. This also leads to the designing and Design thinking process that involves both scientific and creative thinking, using visual thinking being a major focus area within these courses along with the software used as tools for creating applications. Emerging Technologies such as 3D Printing, Artificial Intelligence, augmented; Virtual Reality, Internet of Things are becoming an absolute must or an Engineer. All organizations either want deep knowledge of these fields so as to provide employment on basis of the knowledge of these sectors OR they want engineers to have a broad understanding of these fields so as to make their product or services as well as their work more effective and efficient.

Introduction to various certificate (2 months) courses

➢ 3D Printing and Its Application

In today's era of continuous innovation and demand for shorter product realization time 3D printing is a must know technology. Over the last decade, 3D printing (Additive Manufacturing) gaining spot as an inevitable manufacturing technology in defense, power generation, aerospace, medical and automobile fields. AM empowers the innovators with enormous design freedom and emerges as a key technology for manufacturing customized products.

This Course will impart knowledge and skills related to 3D printing technologies, design Approaches for 3D printing, selection of material and equipment. Participants will also be benefited from hands on experience, knowledge sharing by the industrial and academic experts.

➢ LaTex: for Everything and for Everyone

LaTeX, a document preparation system, is widely used for publishing in many scientific fields like mathematics, statistics, computer science, engineering, chemistry, physics, economics, linguistics, etc. It is a powerful and open-source system that provides numerous facilities for automating typesetting of the document: i.e. structuring page layout, listing and auto-numbering of sections, tables, and figures, generating a table of contents, managing cross referencing, citing, and indexing.

Online	LaTeX : for Everything and Everyone

- Fees: *Rs. 300*
- *Couse Content : Appendix A*
- *Duration: 2 Months*
- *Session will be conducted on Sat/Sun & Public Holiday*
- *Requirement: Computer/PC with internet Connection*

Offline	3D Printing & Its Application

- Fees: *Rs. 750*
- *Couse Content : Appendix B*
- *Duration: 2 Months*
- *Session will be conducted on Sat/Sun & Public Holiday*
- *Requirement: Computer/PC with internet Connection*
- *Venue: GTU Chandkheda Campus, Ahmedabad*

Payment Details:

Bank Details of GISC
Name: GTU INNOVATION & STARTUP CENTER
Bank: State Bank of India
Account No: 36966340250
IFSC Code: SBIN0011770
Branch: IIT Gandhinagar

BHIM
SBI Pay

Scan & Pay Using Any UPI App to
ID: gtuinnovation@sbi
MERCHANT NAME: GTU INNOVATION AND START UP

BHIM UPI

Registration Link: https://forms.gle/SMkKXwhy87kB5ZqAA
Online Platform: Cisco Webex
Course Will be Start from: 20th Nov 2021
Time of Course: 4 PM Onwards (IST) for Online/Offline Mode

Note: Certificate will be given to those who will attend at least 60% of session and Obtain 60% Marks in Evaluation.

For any query you may contact to
Prof. Raj Hakani, Assistant Professor, GTU
Email ID: dic@gtu.edu.in
Contact Detail: 079-23267593/531

26/10/21
Registrar

Appendix - A
Latex : for Everything and Everyone

Sr. No	Syllabus Content	No. of Hrs.
Module 1	Introduction This topic introduces the learner to LaTeX, its installation, and different IDEs. The learner creates the first document using LaTeX, organizes content into sections using article and book class of LaTeX	5
Module 2	Styling Pages In this topic, the session starts by reviewing different paper sizes, examines packages, formats the page by setting margins, customizing header and footer, changing the page orientation, dividing the document into multiple columns. The topic ends with reading different types of error messages.	6
Module 3	Formatting Content This topic concentrates on formatting text (styles, size, and alignment), adding colors to text and entire page, and adding bullets and numbered items. It concludes by explaining the process of writing complex mathematics.	6
Module 4	Tables and Images The topic starts by creating basic tables, adding simple and dashed borders, merging rows and columns, and handling situations where a table exceeds the size of a page. The	5
Module 5	Referencing and Indexing In this topic, the learner learns to add cross-referencing (refer to sections, table, and images), add bibliography (references), and create back index.	4
Module 6	Presentation using Beamer Introduction to creating slides, adding frames, dividing the slide into multiple columns, adding different blocks, etc..	6
	Assignments 1. Write one surveys paper in IEEE format (Max 4 Page) 2. Make PPT using Beamer (Max 12 Slides)	8
		40 Hours

Experts: Shri Sheikh Mohmadishak Aabdulsalam (Ishq Sheikh), Asst. Prof. GEC Dahod

Appendix - B

3D Printing & Its Application

Sr. No	Syllabus Content	No. of Hrs.
Module 1	**Introduction & Vision** Introduction, What is Innovation, What is Invention, What is scientific outlook, Steps for scientific outlook, Quiz	12 Hrs
Module 2	**Basics of 3D Printing** What is 3D Printing, History of 3D Printing, Overview of Applications, Opportunities, Types of 3D Printing, Quiz	
Module 3	**Extrusion technology –** FDM/FFF Extrusion technology, Fused deposition modelling (FDM/FFF), REPRAP movement 3D Printer components & its functions, Article study, Quiz	
Module 4	**3D Printing method** Types of 3D Printing methods, Article study, Quiz	
Module 5	**Computer Aided Design** What is CAD – Computer Aided Design (CAD), Benefits of CAD, Software login / Install CAD software features, Interface, Digital design, modelling & visualization tool	12 Hrs
Module 6	**CAD Hands-on** Portfolio CAD model Hands–on, Case study, Evaluation of CAD activities, Article on CAD, Quiz	
Module 7	**G-code & for 3D Printing** G-code, slicing softwares What is slicing, CURA – Interface features & Importance	
Module 8	**Slicing Hands-on** Portfolio slicing Hands-on, Case study, Evaluation of slicing activities, Article on slicing, Quiz	
Module 9	**Brainstorming & Design thinking session – 3D** Printing Brainstorming & design thinking, Student's CAD design showcase, One page student's CAD design submission, conclusive remarks, Correlation between time, speed & temperature, Tips & tricks for better 3D Printing, Quiz	

Module 10	Disruptive 3D Printing – Case studies & Opportunities What is disruption, Different disruptive technologies, 3D Printing real life case studies & opportunities in Space technology, Medical, Architecture, Fashion, Music, Automobile & Education	12 Hrs
Module 11	3D Printing in Educational revolution 3D Printing in Education revolution, Possibilities & case studies	
Module 12	Case study & Hand-on on 3D Printer	08 Hrs
		42 Hours

Experts: Shri Jayesh Mahitkar, Director, MahitX Pvt. Lts (Young Entrepreneur Awardee)