

QUESTION PAPERS FOR END TERM THEORY
EXAMINATIONS

November/ December-2025



B.Tech, B.Tech (Evening), B.Design,
1st, 3rd, 5th & 7th SEMESTER

INDEX

B.TECH

S.no.	Paper Code	Page No.
1.	AE	1-39
2.	AP	40-43
3.	AM	44-47
4.	AC	48-50
5.	BT	51-75
6.	CE	76-124
7.	CH	125-156
8.	CO	157-180
9.	CY	181-182
10.	CS	183-200
11.	DA	201-202
12.	EE	203-248
13.	EC	249-288
14.	EN	288-320
15.	EP	321-353
16.	EV	354-358
17.	EP	321-353
18.	EV	354-358
19.	HU	359-373
20.	IT	374-421
21.	ME	422-480
22.	MC	481-507
23.	MG	508-509
24.	MA	510-511
25.	MBA	512-517
26.	PE	518-549
27.	SE	550-573
28.	VAC/AEC	588-625

DESIGN

S.no.	Paper Code	Page No.
1.	DD	574-587

B.TECH [Eve.]

S.no.	Paper Code	Page No.
1.	CMA	626-627
2.	CHU	628-630
3.	CME	631-634
4.	CCE	635-652
5.	CEE	653-658

Total No. of Pages:01

574

Roll no.....

I SEMESTER
B.DES

END TERM EXAMINATION -2025

COURSE CODE: DD101

Time: 3:00 Hours

COURSE TITLE: World of Design

Max. Marks: 40 Marks

Note: Attempt all the questions.
Assume suitable missing data, if any.
Attempt all the question on A3 sheet only.

Q1. Choose any one natural object

- a) Make a simple sketch of the natural object.
- b) Identify two design principles seen in it (symmetry, pattern, repetition, strength, protection, balance, color coding, etc.).
- c) Explain one product idea inspired by this natural object. Include a rough sketch + 3–4 sentences.

[CO-1,2,3,4] [10 Marks]

Q2. Choose any one small product you use daily—such as a bottle, pen, bowl, keychain, mobile stand, spoon, or wallet.

- a) Describe your design language by choosing any three elements from below:
 - Form (soft, geometric, angular, organic, etc.)
 - Color Palette
 - Materials
 - Texture / Surface feel
 - Lines & Proportions
 - Visual or cultural cues

Write 1–2 lines for each chosen element.

b) Sketch the product and write 4–5 lines explaining:

- How your design language influenced the shape, color, and material
- Why these choices make the design unique or meaningful
- How your design language improves usability or emotional appeal

A neat sketch is mandatory.

[CO-1,2,3,4] [15 Marks]

Q3. Choose any simple everyday object and analyse it using the Cascadian Growth of Design. Describe its materials, mechanism, one design limitation, and propose an improvement that enhances the product at system or environment level with a small sketch.

[CO-3,4] [15 Marks]

-END-

Total no. of Pages: 4

575

Roll no.....

III SEMESTER B.Des

END TERM EXAMINATION

Nov-2025

COURSE CODE: DD201 COURSE TITLE: PHYSICAL ERGONOMICS

Time: 03:00 Hours

Max. Marks: 40

Note: All questions carry equal marks.

Assume suitable missing data, if any.

Sheets: 2 A3 sheets+ 1 answer sheet+ 1 REBA+1 RULA

Q.1 Explain the Following Terms

- a) Tendinitis
- b) Herniated discs
- c) Base of Support (BOS) & COG (Center of Gravity)
- d) SCIATICA
- e) User Compatibility

[5][CO1;CO2;CO3] [L4]

Q.2 Workers in a garment manufacturing unit report frequent hand fatigue and wrist pain while using large fabric-cutting scissors for long durations. Describe the ergonomic design concerns and considerations that should be taken into account when redesigning these cutting scissors.

[5][CO3] [L2,4,6]

Q.3 What are the key functions of the vertebral column, and how does it contribute to the overall well-being and functionality of the human body?

[5] [CO2][L2]

Q.4 Describe, with the help of appropriate sketches, the various ergonomic factors to be considered while designing a height-adjustable school desk and bench for children.

[5][CO1] [L5,6]

Q.5 Define Ergonomics and outline its primary objectives.

[5][CO3] [L4]

Q.6 Explain how anthropometric data supports the design of control panels and touch interfaces in public kiosks (e.g., ATMs, ticket machines)

[5][CO2] [L3]

Q.7 In many garment factories, sewing machine operators perform repetitive stitching tasks for long hours while sitting in static postures with forward neck bending and elevated shoulders (see Fig. 1). Over time, these operators often report lower back pain, shoulder stiffness, and wrist strain.

[10][CO4] [L2,4,5,6]

- a) Using appropriate Ergonomics Risk Assessment tools (such as RULA and REBA), evaluate the risk levels associated with the operator's posture, seating design, and repetitive hand movements.
- b) Based on your assessment, propose ergonomic modifications to the chair design, table height, foot pedal placement, and task cycle to reduce the risk of Musculoskeletal Disorders (MSDs) and enhance productivity.



Fig.1 Sewing Machine Operator

S 77

Total No. of Pages: 02

SEMESTER
III

Roll No. _____

END TERM EXAMINATION

NOVEMBER 2023

COURSE CODE: DDES01

COURSE TITLE: UNIVERSAL DESIGN

Time: 500 Hours

MAX. MARKS: 40 MARKS

Note: Answer all the questions.

Answer both side 2A3 Sheet are required

Q.1 Conduct an accessibility audit of either an Indian Railways AC3/AC2/3E coach or an Airline Economy Class cabin (choose any one) based on your past travel experience. Using the universal design attributes identified during your course assignments:

- a) Identify and describe the areas where design intervention is required.
- b) Explain each problem clearly with the help of suitable illustrations.
- c) Propose well-reasoned design solutions for the identified issues and illustrate them appropriately.

[30 Marks] [CO-04] [BT-04]

Q.2 Discuss the significance of human senses in the context of universal design and explain how incorporating these senses can enhance the overall design experience. (Word limit: 200 words)

[10 Marks] [CO-01] [BT-01]

END

Total No. of Pages:02

578

Roll no.....

5th SEMESTER
B.DES

END TERM EXAMINATION

NOVEMBER-2025

COURSE CODE: DD303 COURSE TITLE: DESIGN THINKING

Time: 3:00 Hours

Max. Marks: 40 Marks

**Note : Attempt all the questions. Question.
Assume suitable missing data, if any.**

- Q1.** Create a detailed Empathy Map for a "commuter using a public metro system in a metropolitan city." Based on your map, synthesize a core user need statement. **[CO2][BTL 6] [5 Marks]**
- Q2.** With the help of a well-labelled diagram, explain the four distinct phases of the Double Diamond design process model. Briefly describe the type of thinking (divergent/convergent) used in each phase. **[CO2][BTL2] [5 Marks]**
- Q3.** What is Interpretive Research in the context of design? Explain any two methods used in this approach and why they are crucial for developing deep user insights, especially when compared to purely quantitative data. **[CO5][BTL2][5 Marks]**
- Q4.** Explain the following terms briefly: **[CO3][BTL2][10 Marks]**
- a) "How Might We" (HMW) Question
 - b) User Journey Map
 - c) Ethnography
 - d) Brainstorming
 - e) SCAMPER technique

P.To.

579

25. A local municipality wants to improve the experience of waiting at a public bus stop. Apply a condensed design thinking process outline:

- i) Suggest one method for empathetic research.
- ii) Frame a user-centric problem statement based on a likely finding.
- iii) Generate three distinct solution concepts.

[CO1-4][BTL 3&6][15 Marks]

OR

26. Explain the Double Diamond model of Design Thinking. Discuss how each stage contributes to an iterative design process. Also, illustrate the Double Diamond process with a relevant example from your NGO project, highlighting key decisions taken at each stage.

[CO1-4][BTL 3&6][15 Marks]

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**END TERM EXAMINATION
NOV-2025**

COURSE CODE: DD391

**COURSE TITLE: CLAY, CERAMIC
AND GLASS MOULDING**

Max. Marks:

**Time: 03:00 Hours
40**

Note : Attempt all the questions. Assume suitable missing data, if any.
Attempt Question no 13 on A3 Sheet

Choose the correct options : [1x10 marks]

Q1. Clay becomes hard and strong after:

- a)Drying b)Firing c) Wedging d) Mixing

Q2. The main ingredient in clay is:

- a) Sand b) Silica c) Iron d) Magnesium

Q3. Bisque firing is the:

- a) First firing b) Second firing c) Glaze firing. d) Fast firing

Q4. Pottery wheel is mainly used for:

- a) Glazing b) Painting c) Throwing pots d) Mixing clay

Q5. Glaze gives the ceramic surface a:

- a) Rough finish b) Waterproof and shiny finish
c) Cracked finish d) Matt paint finish only

Q6. Earthenware is fired at:

- a) Low temperature b) Very high temperature
c) Medium temperature d) No firing needed

Q7. A tool used for cutting clay is:

- a) Wooden rib b) Wire cutter c) Sponge d) Brush

Q8. Glass is mainly made from:

- a) Iron b) Sand (Silica) c) Plastic d) Metal powder

Q9. Slip is:

- a) Dry clay b) Liquid clay c) Glazed clay d) Burnt clay

Q10. Kiln is used for:

- a) Mixing glaze b) Painting pots c) Firing clay d) Cleaning tools

Answer the following questions. Write simple and clear answers in 100 words .

Q 11. a) Explain the basic steps in making a ceramic object, from preparing clay to the final fired piece.

OR

b) Describe different types of clay and mention simple uses of each.

[5 marks]

Q12. a) Write a detailed note on glazing—what glaze is, why it is used, and how glaze firing is done.

OR

b) Explain three common hand building techniques: Give simple examples for each.

[5 marks]

Q13. Create a ceramic design inspired by the internal structure of a natural form (such as honeycomb, coral, or tree rings). Illustrate how this structure influences the vessel's form and decoration. Use pencil shading for rendering on A3 sheet given .

[20 marks]

-END-

580

Total no. of Pages: 01

581

Roll no.....

5th SEMESTER **B. Des**

END TERM EXAMINATION

Nov-2025

**COURSE CODE: OED393 COURSE TITLE: Metal, Plastic and Mix
Material Study**

Time: 03:00 Hours

Max. Marks: 40

**Note: All questions carry equal marks.
Assume suitable missing data, if any.**

- Q.1 Discuss with a suitable case study "the importance of material selection in the process of physical product design." [10] [CO3] [BTL4]
- Q.2 What are the key differences between thermoplastics and thermosetting plastics? Explain with examples. [10] [CO2] [BTL2]
- Q.3(a) What are composite materials, and why are they used in high-performance applications? [10] [CO4] [BTL1]
- or
- Q.3(b) Explain the Environmental Impact of Material Choices with suitable examples. [10] [CO4] [BTL2]
- Q.4(a) Which factors should be prioritised when selecting materials for medical implants? [10] [CO4] [BTL1]
- or
- Q.4(b) Provide an example of a product that changed significantly due to advancements in material technology. How did the material change improve the product? [10] [CO4] [BTL5]

NOVEMBER-2025

END TERM EXAMINATION

COURSE CODE: DD425

COURSE TITLE: APPLIED ERGONOMICS

Max. Marks: 40 Marks

Time: 3:00 Hours

Note: Attempt all the questions. Question
Answer book and 1A3 Sheet are required

- Q.1 Short-answer questions, Answer any 3 (3x5 marks)
- Define the core purpose of ergonomics. What is its fundamental philosophy regarding the human-job relationship?
 - Why is designing for the 50th percentile ineffective? What strategy uses the 5th and 95th percentiles for adjustability?
 - Write a definition of ergonomics according to the International Ergonomics Association (IEA)? Explain the different types of ergonomics?
 - Why must designers use stereotypes (e.g. red for stop) and consistent layouts in control panel design?
 - What is the focus of Affective Ergonomics? Explain any three affective level data and their measuring techniques?

Q.2 Long Answer Question (25 Marks)

System Design Challenge: Air Traffic Control (ATC) Console

Imagine you are the lead consultant for the comprehensive modernization of a major international airport's Air Traffic Control(ATC) Tower. The existing controller workstations, designed two decades ago, are no longer adequate. Current performance reviews indicate high rates of stress-related absenteeism and a rising prevalence of Musculoskeletal Disorders (MSDs) among controllers who maintain static postures during long shifts. Furthermore, incident reports highlight errors during peak traffic periods attributed to information overload and poorly designed visual displays.

Your response must address the following three interconnected domains and their integration:

- Physical Ergonomics: Anthropometric Workspace Design
- Cognitive Ergonomics: Mental Workload Management via HMI
- Affective Ergonomics: Stress, Fatigue, and Psychological Well-being
- Systems Integration: Holistic Ergonomic Strategy

Note: Support your solution with neat sketches or illustrations where appropriate to visualize your design concepts. Use relevant ergonomic data and theories. Consider both immediate and long-term implications of your recommendations.

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Total no. of Pages:01

SP3

Roll no.....

VII SEMESTER B.Des

END TERM EXAMINATION

Nov-2025

COURSE CODE :DD431 COURSE TITLE _Graphic Design

Time: 03:00 Hours

Max. Marks: 40

**Note : All questions carry equal marks.
Assume suitable missing data, if any**

Q.1 Attempt any 4 of the following questions [10x4 = 40]

i.) Explain anatomy of a typeface? Name at least 10 terms in the given Type. [CO 1], [BLT1,2]

Typography

ii.) Explain the principles commonly associated with Gestalt theory. Do you think implementing these principles can greatly improve the aesthetics of a design. Discuss. [CO2,4][BLT4,5]

iii.) What are the classification of advertising? [CO1][BLT2]

iv.) Keeping your class assignments in mind discuss how the specific elements and principles you observe work together to achieve its purpose and evoke a particular response from you or your audience.

[CO3,4][BLT3,4]

v.) What are the components of advertising? [CO2][BLT2]

vi.) Define widow, orphan, runt, river and justification. [CO1][BLT2]

vii.) Define advertising and what are its types? [CO1][BLT2]

584
1st SEMESTER

B.DES.

END-TERM EXAMINATION

NOV-2025

COURSE CODE: DD-441

COURSE TITLE: AUGMENTED AND VIRTUAL REALITY

Time: 03:00 Hours

Max. Marks: 40

**NOTE: All questions carry equal marks.
Attempt answers on 1 Answer sheet + 1A3**

Q1. Congratulations on taking up the challenge of learning cinematic environments in Unreal Engine

1. Sketch or illustrate the most representative snapshot of the cinematic environment you created in Unreal Engine 5.xx.
2. Reflect on your learning while creating the cinematic environment and its walkthrough. What did you find interesting? What difficulties did you encounter and solve? What difficulties remained unresolved? What did you wish to achieve but could not figure out how to do?
3. Create a storyboard in not more than 10 frames for the game you developed in Unreal Engine 5.xx.
4. Reflect on your learning while creating your game with action controls and a score card in Unreal Engine 5.xx. What did you find interesting? What difficulties did you encounter and solve? What difficulties remained unresolved? What did you wish to achieve but could not figure out how to do?

[20 MARKS]

Q2 Post Mid-Semester, you took up the challenge of porting your cinematic environment and game to the Oculus Meta Quest headset.

1. Describe the difficulties of configuring Unreal Engine for Oculus Meta Quest. How did you resolve them?
2. Describe your experience of using the Meta Quest headset. What programs did you try?
3. Reflect on your experience of porting your cinematic environment and game to the Meta Quest headset. In hindsight, how could you have enhanced your success?
4. Suggest specific strategies or resources that could enhance your self-learning in Augmented and Virtual Reality beyond this course.

[20 MARKS]

-END-

Total No. of Pages: 01

585

Roll no.

VII SEMESTER
B.DES

END TERM EXAMINATION

November-2025

Course Code: DD-445

Course Title: Design for UX

Time: 3 Hours

Max. Marks: 40 Marks

Note: Attempt all Questions.

- Q1. What were your main research goals, and how did they guide your choice of product and participants for the study? [10]
- Q2. How did you carry out the 7-day diary study, and what steps did you take to collect consistent and meaningful entries from participants? [10]
- Q3. What key patterns, behaviours, or usability issues did you find in the diary entries, and what insights did these findings help you uncover? [10]
- Q4. Based on all your insights, what overall conclusion can you draw about the user's experience over the 7 days, and what does this tell you about the product's real-world use? [10]

-END-

Total no. of Pages:2

586

Roll no.....

7th SEMESTER

Dec.

END TERM EXAMINATION

Nov-2025

DD473 Current Trends and Social Media

Time: 03:00 Hours

Max. Marks: 40

Note: Q.1 to be attempted first on the Answer booklet.
Attempt Q.2 (After submission of Answer booklet) online/digitally with chosen software using laptop. Internet is allowed for research/references. Classroom Code: 69104421.
Use drawings & sketches to illustrate wherever applicable.

Q.1 Discuss in detail on your understanding of media power and its influence on mass audiences by attempting ANY ONE of the following:

A) Discuss how social media influences fashion trends, political opinions, and linguistic preferences (e.g. use of "delulu is the only solulu" in daily life).

OR

B) Define what an audience is and discuss their content preferences on media consumption based on their age, gender, location, occupation, and other demographic factors. Provide examples for each.

For example: define what kind of content is consumed by your parents, or siblings or peers of the same age. What kind of social media platform they use more.

OR

C) Explain the concept of media power and its impact on shaping cultural norms, values, and beliefs. Discuss how media can be used to promote positive change and social justice.

[20 Marks][CO1,3,4][BTL2,2]

Q.2 Design a post or poster by subverting the meaning of a popular advertisement for Fair & Lovely, a skin-lightening cream, to deconstruct the notion of normalcy of beauty in India. Use visual and textual elements to create a new narrative that challenges the conventional beauty standards.

Steps:

1. Choose a popular Fair & Lovely advertisement and analyze its visual and textual elements.

Total no. of Pages:2

587

Roll no.....

2. Create a new advertisement that subverts the original message, challenging the notion that fair skin is beautiful. (Use images, slogans, and text to convey your message.)

3. Explain the changes you made and the reasoning behind them.

[15+5=20 Marks][CO3,4,5][BTL5,6]